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SCIENCE FICTION AGE



COVER: The artist Rayo depicts a decidedly different alien invasion. **ABOVE:** Bob Eggleton conquers the universe. See how in the Gallery on page 70.

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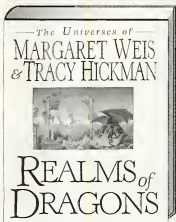
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SF was so much older then; it's younger than that now.

TWENTY YEARS AGO THIS SUMMER I attended the Clarion Science Fiction and Fantasy Writers' Workshop at Michigan State University. This six-week course had produced writers as diverse as Octavia E. Butler, Kim Stanley Robinson, and Lucius Shepard. I was 24 years old, had been working in the comic book business since I was 19, and needed to remind myself that what I really cared most about doing was writing fiction. Two decades passed and last month I went back again, this time as a Guest Editor, someone presumed to have learned something about the writing life in the intervening years. I read 85 short stories written by 18 students, shared what I could of my journey, and was so taken with one piece that I'm presenting it to you in this issue—"Primordial Chili," by Tom Gerencer.

Whether writing can be taught has long been a subject of debate. There are those who feel that artistic talent is innate, and all that ever can be transmitted from teacher to student is craft. (Isn't that enough?) Others believe art to be 99 percent perspiration, and within the grasp of all those who want it badly enough to continue to strive. It's the scientific battle of nature versus nurture carried over to the world of SF writing.

Where do I fall in this brouhaha? Somewhere in between. I still believe now what I knew then—that an intensive writing workshop such as Clarion was a crucible, and it could turn away the number of years that stood between you and your goal, whatever that goal happened to be. This is not to say that each participant necessarily gets to reach the goal he or she expected, only that one's trip will be measurably shortened. For some the decade it would have taken them to "get it" will be condensed into a few years. And for others, those who were likely to give up the writing life after bashing their heads against their keyboards for a decade, well, yes, they often fell silent immediately upon returning home, but that was still success of a sort, as they did achieve the elusive goal of getting where they were going a little more quickly. And isn't that a good thing? Better to learn the truth of one's life and move on earlier rather than later.

When I arrived at Clarion in 1979 I was in search of my soul. Over the previous half-decade I had become distracted from what really mattered by the camaraderie, easy money, and kicks of the comic book field. Who had the dedication to spend months working on a short story that might sell in years if at all, when one could write a script, or a letter col-

umn, or the text on the side of Störpee cups, hand it in on Friday, and be able to cash the paycheck the following Wednesday? I'm afraid that I did not have the strength to resist that temptation, and so I quickly forgot the times I'd force myself to write a short story a day, emulating Harlan Ellison's instructions for making contact with one's muse. Those years working for Marvel and DC Comics were fun, and I loved comic books, but I came to realize that I was not really in charge of my fate, having gotten involved in the field through a complex series of coincidences that I don't have time to go into here—and so I reached out to Clarion to make a break from the past.

It worked. Oh, along the way between then and now I was distracted by other things, such as writing for television, but for the most part I have stayed focused on writing stories—the kind without pictures. I've nothing against those who choose to write comic books, TV, or movies, and I enjoy their products, but what brings me the most personal joy is creating a story with the right words in the right order, or as close to that as my skills are able to get.

This summer I met 18 others who obviously feel the same way. In addition to Tom Gerencer, I also spent a long, productive weekend with Drachen A. Birch, Tobias S. Buckell, Michael Cansfield, Jenn Reese, Lisa Batya Feld, Timothy B. Harahan, William M. Hervey, Sharon K. Kier, David Kirby, Simone R. LeRoy, Karen Meisner, Hillary Moon Murphy, Fred Ollinger, Tim Pratt, J. Simon, Mark M. Stafford, and John Sullivan, all names that I hope you will come to know over the coming years.

What a long strange trip it has been. I wonder if any of them will return in the year 2019 to pass on what they've figured out over the next 20 years. Will they feel as odd as I did, wandering the campuses, and wondering if I somehow stepped back in time? It was eerie to walk ground not traveled in decades, and then for the same purpose, at the same time of year. Will one of them return at some future date and walk about, and think, "Ah, there's the volleyball court where I broke my fingers?" Perhaps, but with his or her own memories, of course. But memories that boil down to the one shared memory held most important by all of us who attended Clarion: This is where lives are changed.

Will the Clarion Class of '99 be one that you will remember? I believe that it will. Please turn to page 78 to receive the first of those memories.

Scott Edelman

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Dear Mr. Edelman:

I just wanted to let you know, there are some people other than the Editor's mother who read every word of your Editorials. As a yet-unpublished writer of novels and short stories, I find listening to what editors think can be most enlightening. I always enjoy reading your thoughts. Keep up the good work with *SF* Age, perhaps some day it will include mine.

Sincerely,

Cinnamon Siegf-Krause

Dear Mr. Edelman:

I'm a young fan, and studios of the American Pulp Age.

I'm furious, and deeply sad, with the talented writer Thomas Disch. Like most of the New Wave authors, he is trying to break the pulp crystal with the hammer of intolerance and envy. I think that New Wave authors are poorer than pulp authors. I think of my god, Ray Bradbury, and such prose poets as Stanley Weinbaum, Edmond Hamilton, Nat Schachner, Robert Bloch, H.P. Lovecraft ... the list is big and unforgettable.

Pulp authors, Mr. Disch, wrote with passion, necessity, and love. New Wave authors wrote with *Das Kapital* by Marx on the desk. This is the big difference. Pulp authors defended a style, an epic; the New Wave authors defend political ideas. Nobody will dirty that glory.

It's sad for me to read bad words against people such as Heinlein and Lester del Rey, because I'm living in a country of nightmare. I'm a writer here in Argentina and I can't publish here because I'm not Communist. It's terrible. Like Disch, Argentines judge an author not for the talent but for his political ideas. Ridiculous! Unforgivable! Of course, Heinlein wasn't like Disch said, anyway. I'm not interested in Heinlein's moral but in his talent, his prose! Argentina loves New Wave authors thanks to their leftist point of view, and not for their talent. I'm a stranger here. I'm "out of fashion." My classic sense of wonder is hated here. But still I defend the golden pulp gods. Thanks, Tamas Wolansky, for defending them.

I'm sad and furious because I admire you, Mr. Disch.

Sergio Logioco

Dear Mr. Edelman:

Your Editorial in your September 1999 issue was succinct, clear, and gratifying to read. From all the nonsense I hear all about me, and from all the absurdities delivered from Congress, I fear that very few people

will understand your arguments and far fewer will even want to! And I fear things will only get worse unless some miracle will save us from both Gore and Bush.

While I am writing let me say that I appreciate most your Books and Television departments.

Live long and prosper and all that stuff,

Jack D. Slater

Dear Scott:

Thank you for publishing "He's Only Human" by Lawrence Watt-Evans in your September '99 issue. It was nice to read a piece that depicted the lighter side of Science Fiction, one where we can smile at our paranoia of government. To quote the author: "... leaving the country in the hands of humans—it's not safe!" A thoughtful reader might speculate that it is not even safe to leave our government interns in the hands of humans. I hope that you will continue to include stories in *SF* Age that allow us to smile at our future as portrayed in Science Fiction.

I heartily agree with your Editorial in which you state that "Art does not create the problems of life, it only depicts them." Science Fiction at its best allows us to envision our future with wonder instead of fear, and in some cases, as in Mr. Watt-Evans' story, we can have a good giggle, too.

Sincerely yours,

David Lowrey

Dear Scott:

Lots of things to say, but I will not let them all out now—to save you eyestrain.

The Golden Age of Science Fiction is age 12? Yes, I can believe that! I might have been 10 (!) when the bug bit me. Of course, I had read *Buck Rogers* and *Flash Gordon* in the comics by then. As I recall, I was home from school sick when my mother brought me home an issue of *Amazing Stories*. This was in 1942. I was soon caught up in reading all the other pulp Sci-Fi mags I could get my hands on: *Fantastic Adventures*, *Startling Stories*, *Thrilling Wonder Stories*, and *Planet Stories*. For some reason, I never did read *Weird Tales*. Later on, there was *Astounding*, *Galaxy*, *The Magazine of Fantasy and Science Fiction*, *Other Worlds*, and probably a few more I can't remember the names of at the moment. I collected them for a long time—until I had to move. I then found the cost of ownership too high and sold my entire collection (for 5 cents a copy!) to Friend's Book Store here in DC. *Captain Future* was my hero for many years.

Well, college and subsequent professional development, then family, slashed my reading to microscopic levels, except for paperbacks. I tried to keep up with the movies, "to keep them honest," for many years. I once had the experience of seeing what I consider the worst SF movie ever made: *Queen of Outer Space*, with ZsaZsa Gabor.

Of course, when I saw the ads for the original *Star Wars*, I had to see it. That wonderful graphic used in the ads was irresistible. Luke with his sword defending Princess Leia! I attended the second screening on Long Island (I was working on LI at the time) at the big shopping center where Roosevelt Field used to be (can't remember the name of the shopping mall). I bought my ticket well in advance of the screen time, had some food, and went back in and strolled past the line that stretched out forever at the ticket counter and went into the theater. It, of course, was full by the time the show started. The introductory scroll was electrifying and certainly aroused the interest of all. The opening scene with the battle cruiser chasing the small ship was wonderful—and then the Storm Troopers invading the little ship—and then, striding through the mist of battle—Darth Vader! Someone in the audience cried out, "It's the Black Knight!" And then later we finally got to see what the inside of a sleazy spaceport bar looked like. When the *Millennium Falcon* made its first leap into hyperspace, the audience cheered and applauded that fantastic special effect as the star field bloomed and whited out. It was how we always thought a jump into hyperspace would be like!

I suppose there was some criticism of Lucas for making a big film like this—and writing it himself instead of basing it on some existing story. But it was a terribly smart move! It seems like every time Hollywood makes a Sci-Fi movie based on an existing story, many fans are enraged because they don't do it right. Well, when you write the story yourself, they can never get mad at you for that reason!

I'm just getting warmed up now—but I'd better stop before I put you under. I envy people like yourself who have been able to immerse themselves in the genre and make a living at it. I enjoy your magazine. Keep up the good work.

Ross B. McMillen

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Greg Bear hopes that we'll turn off the TV and give a listen to *Darwin's Radio*.

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NO CONTEMPORARY AUTHOR OF SCIENCE Fiction has intelligently considered and ingeniously employed more ways of fruitfully and exponentially undermining his own narratives than Gene Wolfe (although a chosen few—Barry Malzberg, Christopher Priest, Brian Aldiss—may have come close). A large portion of Wolfe's oeuvre consists of stories whose immediate surface voice is frequently bent, subverted, transeuorified, or mitigated by a secondary voice usually concealed within a net of subtle textual clues. Two or more interpretations of Wolfen events are standard, and part of the fun of reading Wolfe is assigning identities to the voices and deciding which is primary, which secondary (if such relative weights can be assigned at all).

Paradoxically, Wolfe also has an ability and a reputation for composing stories that are almost naively straightforward in their transcription of events. Physical happenings and emotional states are rendered by

certain of his narrators in crystalline simplicity, sensorially rich and emotionally impactful. And sometimes, of course, these two characteristic Wolfes—deceiver and revealer—inhabit the same page.

The Book of the Long Sun (1993-96) at first seemed to belong to the straightforward camp. The tale of a generational starship shaped like your standard O'Neil tin can (hence the titular rodlike axial sun) coming to the end of its voyage was stylistically and thematically informed on every page by the Jesus-like character of its protagonist, Patara Silk, a humble, honest, ultimately influential priest of the ship's AI gods. What a surprise, then, at the very close of the fourth volume, to learn that the whole long narrative was not the product of some omniscient objective author viewing the wild flurry of events from some nebulous godlike vantage, but rather a historic memoir, a recreation, written by two of the subsidiary characters, a husband and wife named Horn and Nettle. Throughout Silk's story, these two characters hid behind third person (in retrospect, Horn was present from page one of the opening volume, naturally enough). But finally stepping out into first-person voice, Horn disclosed his authorship and portrayed himself living with Nettle and children on the world Blue, the ultimate destination of the starship. Of Silk, they knew nothing more, the priest having remained behind on the Long Sun Whorl.

This year sees Wolfe embarking on a new trilogy that continues Horn's own story, *The Book of the Short Sun*, whose first volume is *On Blue's Waters* (Tor, hardcover, \$24.95, 381 pages). The already-completed companion volumes, *In Green's Jungles* and *Return to the Whorl*, will appear in 2000, thus forming a septet with the earlier installment.

On first inspection, *On Blue's Waters* appears to have cast aside all deception and pretense: Horn speaks to us in his own voice, in the earnest, evocative tones of a great man's amnesiasis, aware that his own modest life, while still worthwhile, has passed its heyday and will never measure up to that of his unique mentor, Silk. But we should be forewarned by Wolfe's previous sleight-of-hand. Before too long, we begin to discern a certain unreliability in this narrator also. This mystery will add spice to Horn's odyssey, which on its own terms is rather uncomplicated, although undeniably replete with adventures.

Let's hear it for the droids!



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At the outset of our tale, which begins some 20 years after the close of *The Book of Silk*, a deputization of town elders approaches the middle-aged Horn with a mission: to return to the Long San Whorl by one of the rare, still-functioning landers in order to find Silk and convince him that the priest's wisdom is needed on the colonized planet, which is suffering a slow regression in skills and resources. Reluctantly, Horn agrees and, leaving his family behind, sets out by boat in quest of the semi-mythical town of Pajarocu, where the lander awaits.

What lies ahead of Horn are a few moments of glory and happiness seasoned with much grief and consternation. The former moments are embodied mostly in the person of Seawrack, a human woman raised from infancy by one of the resident "native gods" of Blue. A kind of Rima-the-bird-girl figure, Seawrack provides Horn with love and comfort. But counterbalancing her presence is that of Krait, one of the inhumans. The inhumans are vampirish shapeshifters who originate on the companion world of Green, but fly across at a conjunction of the planets to plague the

BOOKS TO WATCH FOR

The Borderlands of Science, by Charles Sheffield (Baen). Sheffield has long been one of the finest of our hard SF authors. In his latest science fact collection, he joins the ranks of Asimov with his dissection of the science beneath the skin of science fiction.

Frontier Earth, by Bruce Boxeliner (Ace). The man behind Captain John Sheridan turns from the controls of *Babylon 5* to a word processor. Macklin, a man not of this Earth, is also a man without a memory as he wanders the west to save our planet.

A Cthulu Mythos Bibliography & Concordance, by Chris Jarocha-Ernst (Armistage House). Everything you ever wanted to know about the universe created by Howard Phillips Lovecraft, but were afraid to ask (because you thought Cthulu would eat you if you did). Over 2,600 works cited by author, title, and more.

The Art of The X-Files, edited by Marvin Hofferman and Carol Kismaric (Harper Entertainment). Today's top artists present paranoid visions inspired by the cult TV hit. To paraphrase the words of agents Mulder and Scully, *The Art is Out There*. With an introduction by famed *Neuromancer* author William Gibson.

The Stainless Steel Rat Joins the Circus, by Harry Harrison (Tor). Slippery Jim DiGriz, the greatest thief and con artist in the universe, has long entertained SF fans with his adventures. In his latest novel, DiGriz infiltrates an intergalactic big top.

A Very Strange Trip, by L. Ron Hubbard and Dave Wolverton (Bridge). In a publishing event, best-selling author (and Writers of the Future Grand Prize winner) Dave Wolverton turns a classic story by L. Ron Hubbard into a fast-paced time travel thriller.

Babylon 5: Final Reckoning: The Fate of Bester, by J. Gregory Keyes (Del Rey). *Babylon 5* the television series is over, but the universe lingers on. Bester, the telepath we all love to hate, is the focus of another gripping novel from Keyes.

The Collected Stories of Jack Williamson, Volume One: The Metal Man and Others, by Jack Williamson (Haffner Press). He sold his first story in 1925, and he continues to be a force to be reckoned with in the SF universe. Relive the early years of Williamson's career with this volume that looks at futures past.

Shorter Views: Queer Thoughts and the Politics of the Paralytic, by Samuel R. Delany (University of New England/Wesleyan). He gave us *Dhalgren* and other tomorrow. Now his essays give us a glimpse at what he thinks of today.

Soft as Steel: The Art of Julie Bell, by Nigel Suckling (Thunder's Mouth Press). Bell's sensual paintings deliver powerful images of SF, superheroes, and warriors. With an foreword by Brian Aldiss.



humans. Krait forces Horn to enlist in the inhuman cause, providing Horn with a huge ethical quandary. Finally, Horn's eldest rebellious son, Sineu, offers challenges of his own.

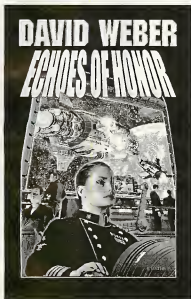
This first book concludes with Horn, Sineu, and Krait aboard the lander, heading not for the starship but for the hellish world of Green. Yet already we have seen shadows of the entire plot of the trilogy. For it soon becomes obvious these books are being written by Horn at a point after he has succeeded in visiting the starship and returned to Blue. Wolfe makes numerous allusions to characters and events outside the scope of this initial volume, convincing us that—unlike most trilogists—he, Wolfe, has the entire story firmly envisioned from the start.

In fact, there are at least three ongoing, interpenetrating time frames in this book. First is the rich past described in *The Book of the Long Sun*, a past Horn frequently dwells on. Second is the "real-time" odyssey Horn is undertaking. And third is the "future" from which Horn writes his book. (Actually, a fourth vantage crops up once or twice, as Horn's sons, Hide and Hoof, interpolate comments from a point beyond the composition of the book.) This weaving of eras is handled masterfully, as you might imagine, but does require close attention from the reader.

Compounding this density is the aforementioned confusion of Horn's identity, not fully explicated here. What it amounts to is this: Horn speaks occasionally of dying, and of becoming taller. Writing after his return, he is living as the ruler of a city

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called Gaon, where the populace calls him "Silk." But Horn denies that he brought Silk back from the starship. Why then is Horn accompanied by Oreb, Silk's pet bird? Is it possible that two personalities are inhabiting one body? We know that the gods of the starship were able to occupy human minds. Has something similar happened to Horn during his visit to the Long Sun Whorl? Only additional volumes will reveal the answer to this intriguing conundrum.

Although Horn's tale is full of incident—his Simakian meeting with the "vanished" natives of Blue is particularly exciting—this is a book where a pervasive nostalgia and melancholy tend to overwhelm action. Horn is no confident two-fisted mystic like Silk, despite any partial sharing of personality, and his passage through the worlds is more that of small-scale sinner than millennial saint, yet nonetheless disturbingly fascinating for all that.

Paul Di Filippo

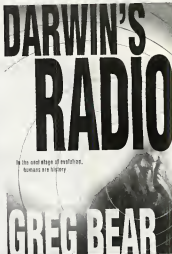
Darwin's Radio, by Greg Bear. Del Rey, hardcover, \$24.00, 445 pages.

In a letter to the reader that runs at the front of *Darwin's Radio*, Greg Bear notes that the fantastic elements of his new novel hardly seem speculative at all, not when compared to the discoveries in medicine and biology that break into the headlines with numbing regularity as we approach the 21st century. To be sure, in a time of cloned sheep and the Human Genome Project, readers don't have to suspend their disbelief very much at all to accept that something ancient encoded in human DNA might revive after millions of years. Bear's elaboration of this startling conceit fills *Darwin's Radio* with plenty of more controversial speculation, but his carefully defined, scientifically anchored starting point makes the book's most arguable suggestions about the nature of evolution and humanity seem less conjectural.

Shortly after the turn of the millennium, three simultaneous discoveries harbinger the outbreak of an illness with the appropriately chilling name "Herod's influenza," which causes pregnant women to miscarry. The flu's origin rests in an HERV—a human endogenous retrovirus—that has laid dormant in our DNA. While the CDC and the White House mobilize the country to battle the "plague," molecular biologist Kaye Lang, archaeologist Mitch Rafelson, and virus-hunter Christopher Dicken uncover the startling possibility that the HERV is, in fact, a possibly beneficial genetic agent of evolution.

Along with Bear's typical expertise of scientific detail, *Darwin's Radio* benefits from an expertly drawn cast of characters. The three leads are particularly well real-

ized. The thematic paradigm of stress and evolution is cleverly embodied in the progression of romantic entanglements experienced by Kaye Lang and Mitch Rafelson; their initial unhealthy relationships prompt



refinements in their personalities that allow them to forge more fulfilling bonds later in the book. Their triumph is contrasted sharply with the fate of Christopher Dicken, whose intellectual and social failings limit his place in the new world posited at the novel's close.

Throughout, Bear avoids the mire of melodrama that commonly engulfs similar bio-thrillers. He focuses instead on the scientific world, particularly the intriguing conflict of politics, economics, and science as the protagonists struggle to uncover the nature and purpose of the HERV. This narrative focus is so tight that the readers will surely share the scientists' surprise at the public's reaction to the crisis. So much of the action takes place in labs and research hospitals, so much of the discussion is technical rather than emotional or philosophical, that the nonscientific masses simply don't register in the plot until they start hurrying bricks.

The side effect of this restricted narrative focus is an uncomfortable elitism, a lingering disdain for the "stinking mass" that often overwhelms the more upbeat faith in life that Lang and Rafelson embody. In fact, the narrative stance toward the mob recasts Lang's faith as an abiding trust in science, in the inevitable wisdom of biology, not our species. This dismissal of the masses might seem justified if a little more time were spent showing the causes of the social unrest, rather than pinning it on such

obvious and overused villains as Pat Robertson, who never even appears on stage to justify the black hat Bear plants on his head. So, too, the social causes of the HERV's re-emergence, hinted at but never discussed in any depth. Revealing these more completely would ground the condemnation of the general public, make it seem less contemptuous.

Bear also seems to struggle a bit at the novel's close. After nearly four hundred pages of tightly controlled prose and razor-sharp plotting, several intriguing characters—eccentric millionaire William Daney, cutthroat businesswoman Marge Cross, and self-serving politician Mark Augustine—are left dangling. A new plague subplot is introduced, then summarily dismissed. Native Americans Sue and Jack Champion, who offer the most compelling and authentic voices challenging those from within the halls of science, are rushed off-stage without proper resolution.

Stranded characters and aborted subplots aside, the conclusion offers a constructive ambiguity that leaves *Darwin's Radio* resembling the real-life headlines Bear references in his note to the reader. The staggering discoveries trumpeted to us in cable newscasts and national news magazines quite frequently reveal that, as Bear puts it, "we are not who we think we are, or what we think we are." Yet they do not always offer an alternative to the model they've just demolished. The bigger meaning, who or what is broadcasting the tunes on *Darwin's Radio* to which we all dance, is still up to each of us to decide. It's something of an act of faith in his readers on Bear's part, and a testament to his skill as a writer, that he leaves the ultimate meaning of his work in our hands, too.

James Lowder

The Radon File, by Denise Vitola. Ace Books, New York. 1999. \$5.99, 304 pages.

If a basic mystery or basic Science Fiction novel has a certain readership, what happens if you combine genres? Do you lose all your readers or do you double your readers? That's the gamble with cross-genre fiction. Denise Vitola has been rolling the dice successfully enough that this is the fifth outing of police detective Ty Merrick. Set in a dysfunctional, dystopian future world, Merrick's careful going from place to place and person to person in the classic police detective manner, in the search for answers, along with her partner Andy LaRue, takes the reader on an insider's journey through this new world.

In this dystopian future a worldwide government exists, founded by the humanitarians and run by mostly faceless bureaucrats. All the shining values that started it have been corrupted. People generally live in poverty and fear. Science is mostly forgotten, power is unreliable, cars are rare,

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**As I spoke I looked from shady
face to shady face. That was
when I realized that they were
not made even slightly more
visible by the fire.
from On Blue's Waters**

and even food is hard to obtain. The worst things that can happen to you are to fall behind on taxes or to get caught making income off the books. Many of the rules, set up in order to create a fair and peaceful society, only end up hurting everyone now, like the rule that only a person caught during a crime can be convicted. This forces police to set up stings to catch the crooks, not just get proof. On the other hand, there are apparently no Miranda rights in this world.

Viola has created a complex, vivid world full of imaginative touches. Merrick's partner drives an ancient Russian car that's treasured because it actually works. Merrick's roommate, Baba, actually has a loom she uses to weave trash into cloth. But why do the people, all of them miserable, keep going on living like this? In fact, how can a government stay in power when the people are so miserable? What will happen come the revolution? Why hasn't there been a revolution already?

But there's no stopping for questions. You've just got to hold on for a wild ride. Merrick is giving us a guided tour (most of the novel is from her first-person viewpoint)—but she knows what's going on, at least as much as anyone does, so new readers to this world just have to hope it ends up making sense!

Most police work, in our world, is simply talking to people, people who almost always are lying to you, so you have to talk to them again, and again, and sift the facts out and force the truth to the surface. Merrick's work is exactly like this. Bernard Horn, an opera singer and man designated by the government as a "humanitarian treasure," is found murdered while being treated for arthritis by breathing the radon fumes in Planetary Health Organization's Regeneration Facility. Merrick and LaRue need to find the killer, not only because it's their job, but also because the government has discovered that they failed their mental health evaluations. This is their one last chance to make up. And if they lose their jobs, they are going to lose their labor designations, end up losing their apartments, belongings, and become slaves working on the public dole. This is not a pretty future. As an added bonus, they are required to work with agents from the hated Environ-

mental Tax Agency. The ETA agents are not into sharing and caring. By page 15, things look grim for the good guys.

Added into the confusion is that Merrick suffers from lycanthropy, "the type who changes subtly in thought and form," instead of literally turning furry. This is thanks to nearly dying from carbon monoxide poisoning. The lycanthropy gives Merrick acute hearing, fast reflexes, unpleasant spells of "stretching" where she seems to grow taller, and many other effects that somewhat grow during the course of the novel. At times this impedes the investigation and at times it helps.

The lycanthropy does, however, very much impede the reader's understanding of what's going on. Magical beliefs abound. Science is being forgotten, or corrupted, in this world, for example by people believing that radon can cure anything when in fact it's a poison. Merrick and LaRue are very skeptical people, they know the scams, and yet over and over LaRue is revealed as believing in some of the magic, and Merrick is shown coping with her lycanthropy. So is there magic in this world? When truth and science disappear do you have to believe in the possibility of magic in order to keep on going? Is Merrick an unreliable, even crazy narrator, who merely thinks she has lycanthropy when in fact she has epilepsy or something? If that's so, then why does her doctor, and lover, Lane Gibson, seem to believe in her?

As Merrick and LaRue delve into who murdered Bernard Horn—for that matter into the mystery of who would even want to murder him—they run into many people with something to hide, including an organization that wants to overturn the government, missing children, alien abductors and abductees, tarot readers, aliens that live at the center of the world, mystics who can reset your troubled chakras, opera singers, and psychiatrists. They even discover that they have secrets from themselves!

It is as convoluted and enjoyable as *The X-Files*. Viola's writing is vivid and full of people, each with a different story, or lie, they live by. Billed as a cross of Science Fiction and mystery, I'd say it's really pure Fantasy.

Rachel Russell

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The Powers That Be

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Those of you who enjoyed *Austin Powers: International Man of Mystery* and then sprinted to the theaters last summer to have Mike Myers's *The Spy Who Shagged Me* tickle your funny bone had better listen up. If, even after this double dose of Danger (Austin's middle name), you still haven't had your fill of Dr. Evil's chronologically embarrassing klocoy or Powers's persistence at shagging Ms. Felicity Shagwell, then you should be running out to the stores to pick up Dark Horse's latest in fine sculpting.

Top talent Sam Greenwell of Acornboy Studios sculpted both (as Scott Evil so succinctly states) the "lazy-eyed psycho" Dr. Evil (with accompanying, and quite hairless, Mr. Blegsworth) and the promiscuous, femm-toting Powers. The bald-pated Big Boy-nant and the cryogenically preserved swinger are each 12" (oh, behave!), come fully assembled, prepainted and cold-cast in resin.

For more information on the displaced duo, visit www.darkhorse.com.



MUSIC

Loving Duchovny



Q: What do you get when you cross folksinger Jewel and FBI skeptic Scully? **A:** Bree Sharp, a beautiful, 23-year-old

singer/songwriter who has a crush on *The X-Files* star Fox Mulder/David Duchovny.

Cheap and Evil Girl, Sharp's freshman album from Trauma Records, features the single "David Duchovny." While we're all gushing ourselves to the television on Sunday nights, desperately trying to figure out exactly what sort of menace the black oil poses, or the true fate of Samantha Mulder, Bree Sharp is in lovesick-struck-agony, wonder-

ing why the American Heathcliff (a.k.a. a Duchovny) won't love her.

The refrain "David Duchovny, why won't you love me?" may read a tad on the silly side, however don't let that sway your opinion. The song (actually, the entire album) is surprisingly good. The catchy "Duchovny" song is

fun music to sing along with while driving around town with the windows rolled down. The rest of the album combines a fluid mix of folk, rock, and pop.

If you want to buy *A Cheap and Evil Girl* visit your local music store or hop on the web and point your browser to www.traumarecords.com



AWARDS



AFTER DISCUSSION BY A seven-member international committee composed of writers and scholars, the John W. Campbell Memorial Award is bestowed upon the best Science Fiction novel of the year. The honor of this year's Campbell award went to George Zebrowski for his book *Brute Orbits*.

Brute Orbits tells the tale of 21st-century

By George

victs being sentenced to asteroids that travel in ever-widening solar orbits. The theory being: When the convicts' time has been served, the asteroid will return to Earth. When a few administrators create "errors" in velocity they realize they can get rid of any undesirable group of convicts they wish. The ultraviolent, the mentally defective, the political upstarts.

A handful of scientists discover a way to overtake these scattered "brute orbits," and a team assembles to search out the lost prisoners. But what they stumble upon is a startling, horrific vision of humanity, human rejects evolving in their own Darwinian societies.

Seven Of Trek



WE WERE ALL SADDENED when *Star Trek: The Next Generation* was cancelled. No more "Engage" or "Make It So," save when the finest crew in the galaxy reassembled for *Generations*, *First Contact*, and *Insurrection*. But as real fans, we need to see see Capt. Picard and his crew more than once every two years. It simply is not enough. Cheer up,



true fans, because Fleer/Skybox has finally released the long-awaited *Star Trek: The Next Generation Season Seven Trading Cards*, which includes, Klingon, character, Hologram, and Captain's cards, as well as special cards autographed by the actor's themselves.

To boldly get these cards, look for them at your local hobby store.



Alternate Yesterdays

WHAT IF ANNIE OAKLEY, while traveling in Buffalo Bill's Wild West Show in 1889, had missed her trickshooting mark, killing Kaiser Wilhelm II? What if John Wilkes Booth had not killed President Lincoln? What if the South had won the Civil War? Or space aliens attacked

during WWII? These questions (and countless more) have inspired writers to rethink, as well as rewrite, history while encouraging Del Rey to declare October Alternate History Month. This annual event, for readers and booksellers alike, is intended to create consumer awareness of this blooming genre. Experience history in the remaking with Harry Turtledove, Harry Harrison, Jake Page, Mark Sumner, and J. Gregory Keyes.

For more information on What Might Have Been, check out their Web site at www.randomhouse.com/delrey/althist.

VCR BUSTERS

ANCIENT CURSES, ALIENS, AND ARNOLD ARE ALL sitting on the shelf at your local video store:

THE MUMMY: High Priest Imhotep (Arnold Vosloo) plays Anclot to the Pharaoh's Guenevere and, for his transgressions receives a fate worse than death: Various body parts are removed and left in pretty little mason jars, after which he is mummified, and locked in a sarcophagus where beetles gnaw on him. Three thousand years later dashing legionnaire Rick O'Connell (Brendan Fraser) and beautiful but clumsy Egyptologist Evelyn (Rachel Weiss) wake up poor Imhotep, unleashing the plagues of ancient Egypt.

SCHWARZENEGGER GIFT PACK: He always promised, "I'll be back." Judging from Twentieth Century Fox's latest Arnold Schwarzenegger DVD gift pack grab bag, it seems he (and his infamous one-liners) have never left. We've watched him demolish entire camps in *Commando* and then forget who he should be in *Total Recall*. *The Running Man* made him sprint as a contestant in a perverted life-or-death gameshow and *Predator* showed us the raw savagery of open conflict, man vs. alien. Visit www.foxhome.com to see how you can get more Arnold into your VCR.

MY FAVORITE MARTIAN: Direct from Disney comes the feature length version of the classic 1963 television show.

Television reporter Tim O'Hara (Jeff Daniels) discovers a crash-landed Martian (Christopher Lloyd) and quickly becomes eager to expose the alien in the press, hoping for a Pulitzer. Posing as Tim's Uncle Martin and using his supernatural Martian powers, he thwarts each of Tim's attempts. Eventually becoming friends, O'Hara and the Martian team up to repair the damaged space ship while overcoming wacky obstacles. Watch for Ray Walston, the original Uncle Martin, to make an appearance.



IDLE HANDS: Idle hands, they say, are the Devil's playground. And the hands Satan finds belong to 17-year-old slacker Anton (Devon Sawa). While Anton tries to keep his demonic right hand from killing too many

friends, Druid high-priestess Debi (Vivien A. Fox) races across the country, tracking satanic events to the film's climactic ending at, where else, but the high-school dance.

GHOSTBUSTER'S COLLECTOR'S SERIES: In 1984 Ray Parker Jr. had us singing "Who ya gonna call?" all summer long. Now, fifteen years later, Columbia TriStar is releasing this Bill Murray/Dan Aykroyd classic on a fully-loaded DVD. Enjoy sifting through the commentary tracks, including one with director Ivan Reitman and writer Harold Ramis silhouetted against the picture and making comments about the film, in true *Mystery Science Theater 3000* format.

TELEVISION

By Melissa J. Perenson

At the start of season 7, the men behind *The X-Files* look to the past and future.



ABOVE: The system once more hides the truth from Agent Fox Mulder (David Duchovny) in "Dreamland." RIGHT: In "Monday," the dynamic X-duo are forced to retize an eerie bank robbery.

WHEN *THE X-FILES* FIRST DEBUTED IN 1993, no one could have predicted the heights of success the series would reach. Now, six seasons and a \$180 million grossing feature later, the show is still going strong, having ranked 12th overall for the 1998-99 television season, according to *Entertainment Weekly*. In other words, reports of *X*'s demise have been greatly exaggerated.

Executive producer Frank Spotnitz's take on the media backlash: "I really think that part of it is that we are not the new kid on the block anymore, and the novelty has kind of worn off," he says, speaking from 1013 Productions' offices on the Twentieth Century Fox lot in Los Angeles.

Of course, following the hype behind *The X-Files*' initial feature film outing and the highly-publicized move from Vancouver to Los Angeles last summer, the spotlight has been intently focused on the show this past season. The move only helped the series, maintains Spotnitz. "One of our editors put it very well: Before the show was dark and wet, and now the show is dark and dry. And I think that's exactly right," Spotnitz says of *X-Files*' dark, cinematic look that had long been credited to the

natural Vancouver environs. "I think we were very successful in maintaining the look of the show. I actually think that the story that was in the media last summer as we made the move was because [the media] was getting ready to knock us down."

There was one unanticipated snafu with the move to Los Angeles that the producers had to contend with. "The budgetary pressure on us was enormous," says Spotnitz. "We had huge pressure from the studio to contain costs. And *X-Files* is a very expensive show to produce, because it's extremely dependent on locations and action, much more so I think than most television shows. But I think, by and large we were pretty smart about the ways we saved money. I don't think most people at home noticed the cost-cutting measures that we took."

One such measure was the 6th season's Christmas episode, "How the Ghosts Stole Christmas." Even though that episode guest-starred such familiar Hollywood names as Ed Asner and Lily Tomlin, "it was essentially one location and one set," explains Spotnitz. "And that was the least expensive episode we did all year long." Likewise, "Milagro"—the episode in which Scully is stalked by a novel writer—drew heavily on Mulder's apartment building and Mulder and Scully's office, again helping to conserve costs. Often, Spotnitz says, the writers found themselves trying to use existing sets and to craft stories that could be told economically.

In contrast, the episode upon which no cost was spared was the third episode of the season, "Triangle." "That one proved to be very expensive, much more expensive than we realized—and that was one of the episodes that was like a lightning rod for the studio," chuckles Spotnitz. "But I'm proud of that episode and that we pulled it off, and very proud of Chris [Carter]



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ABOVE: Chris Carter directing the atmospheric episode "Triangle." BELOW RIGHT: "Triangle" sent Agent Mulder (David Duchovny) to the past to battle Nazis on a ghost ship. BELOW LEFT: Ed Asner and Lily Tomlin in "How The Ghosts Stole Christmas."

for how cleverly he had to write it to allow it to be shot that way, and how he directed it. It was a bold experiment; the first day of shooting we were still prepared to drop the whole approach if it didn't work and shoot it in a more traditional fashion. But it did work."

Early on in the season, though, the producers decided to have a little fun with the new environs. "It's interesting. In the beginning we thought, 'Hey, we're in the desert, let's go shoot all these desert locations we never could do while we were in Vancouver,'" remembers Spotnitz. But, as they soon discovered, shooting in the desert "posed more headaches than we'd realized. So we ended up coming back to familiar East Coast types of locations that we could duplicate in Los Angeles."

The show's writer-producers—a core trio that includes Spotnitz, co-executive producer Vince Gilligan, and producer John Shiban—also took some creative chances in the first half of the season. Once past the urge to take Agents Mulder and Scully out to newly accessible desert locales—an urge

enough successive whimsical and humor-driven episodes in the first half of the season that many viewers were left wondering when, exactly, *The X-Files* switched its format from drama to comedy. The seemingly

at actors for the role that Michael McKean played, who weren't familiar faces, and it just, it was more fun to have somebody people know because it was a comedy." In other episodes, which featured such actors as Bruce Campbell and Victoria Jackson, the casting decisions were driven simply by who was the best actor for the part.

Looking back on the season, some of the episodes worked, and others, Spotnitz acknowledges, did not. "I don't want to single them out. There were a couple that I don't think were what we wanted them to be but there always are every season. I still think on the whole this was a very consistent season. I look back at some of the klunkers in years' past, and I think we did pretty well."

This is *The X-Files*, after all, though, and by mid-season the angst had returned in full force. Most significant was the two-part mythology arc "Two Fathers and One Son." The decision to advance—and essentially resolve—the mythology was a conscious one on the part of Spotnitz and series creator Chris Carter. "We just realized, as we sat down to the mythology episodes for February, that we'd reached a critical mass," Spotnitz explains. "By definition every time you tell a new story you have to complicate [the



that passed quickly when it became evident that the two-hour drive to shoot on location provided more headaches than payoff—the stories instead played with keeping Mulder and Scully off the X-Files. And there were

rapid-fire succession of lighter episodes—including the innovative "Triangle," "Dreamland I" and "II," and "Ghosts"—was not intentional, though. "It just worked out that way, I found," admits Spotnitz. "I think it was just the relief we all felt that the movie was behind us."

More conscious was the use of familiar Hollywood faces as guest stars. "We definitely deliberately chose to cast familiar faces in 'Dreamland' and in 'How The Ghosts Stole Christmas'; it just felt right. We looked

mythology, you can't just keep repeating the same old information." Tackling the mythology in the 6th season offered the element of surprise. Hence, he adds, why they decided, "that we're just going to bring it all to a head now. And so we did. I know there's a lot of questions of mythology that a lot of people still aren't clear on, but the reality is, most of the big answers have already been given."

For those still puzzling over *X-Files* twists and turns, don't lose hope. "You'll see some smaller answers in the coming

episodes," promises Spotnitz. "But if somebody wants a more definitive answer to a lot of other questions, it's going to have to be in interviews with me and Chris in some other medium."

The end of one aspect of the show has meant the birth of another. "We really brought an end to the conspiracy that had driven the show since the 2nd season. We've delivered on our promise [of 'full disclosure'], says Spotnitz. "And the big question, the big mythological question that started the series, is still out there: What became of Mulder's sister? I think that's where we'll end up at the end of the season finale, at the end of our seventh year."

Spotnitz is counting on season 7 being the final season of *The X-Files*. "If anyone was



line and I think it's accessible to everyone."

Expect the show to come full circle in the 7th season, Spotnitz elaborates, as "it will deal very directly with Mulder's sister and with the

Mulder and Scully, there's a definite chemistry between David Duchovny and Gillian Anderson that was immediately apparent to me. It was a very intelligent show, it didn't talk down to the audience, and it had a lot of science and interesting ideas in it. I liked every aspect of it. I loved the way it looked. It was the whole package."

Unlike other writers, Gilligan picked up on Mulder and Scully's voice right away. Yet the voice of Mulder and Scully is typically cited as the most elusive and difficult thing for writers outside the show—and sometimes, even, for those within the series—to achieve. "I felt I understood where they both were coming from," Gilligan says modestly. "It doesn't mean I'm a genius or anything, it's something I guess I just sort of intrinsically understood. I sort of liken it to this big poster with weird patterns on it; if you stare at it long enough, you see the 3-D image pop out. And I think [Mulder and Scully] are sort of like that, to my mind. Some people see that 3-D image, and other people can stare at those posters all day and just see weird patterns. And this is an image I was able to see



ABOVE: Guest star Victoria Jackson falls in love with "The Rain King." TOP: Scully (Gillian Anderson) doubts her skepticism in "Biogenesis." RIGHT: Michael McKean provides the laughs in "Dreamland."

asking me, I would say let's finish up while everybody still loves us and while the quality is still high. And we can look forward to doing movies afterward."

But nothing's written in stone yet. Star Gillian Anderson (Agent Scully) is contracted for 8 seasons, as is much of the supporting cast. And although star David Duchovny (Agent Mulder) has been vocal in the past about not continuing after fulfilling his contract at the end of season 7, Duchovny was quoted this past summer during a TV Critics Association press conference as saying in response to whether there would be an 8th season, "I would never say never about anything."

The new directions for the show stem from "Biogenesis," the 6th-season finale which left Mulder in an asylum and Scully far off on the coast of Africa investigating evidence of an alien spacecraft. "We opened up a new chapter [of the mythology] in 'Biogenesis' which is less conspiracy-driven," says Spotnitz. "Now, you're going to see the repercussions of what this discovery of the spaceship on the African coast means—the race to claim it and to use whatever power it gives the possessor. But it's a much simpler story



relationship between Mulder and Scully."

For as much change that may lie ahead, fundamentally *The X-Files* is still going to be the same *X-Files* that first attracted audiences in those early years—and in fact attracted some of the show's producers to become involved in the series to begin with. Remembers Gilligan, whose first *X-Files* spec script aired in the 3rd season, "I watched the very first episode, I was home alone one Friday night back in '93, and I'd heard about this new show called *The X-Files*. So I said, 'Well, what the heck. Nothing else is on.' And I happened to watch it. Within the first 20 minutes, I was hooked. I mean, the relationship between

right from the start. I think it comes from the great love and affection I have for the characters—and for the theme and concept of the show."

That personal investment is necessary in all of the producer's commitments to the series. Right down to how they decide the content for the next *X-File*. "That's the way we approach it," Gilligan says. "We think of what scares us personally. For me, it's a matter of what would scare me if I'm all by myself. Being scared is a very universal thing." To heck with conspiracy theories and alien abductions—the key to *The X-Files*' success lies in the show's universal appeal. □

Tomorrow comes a little bit closer as scientists dream about the future.



ABOVE: Artist Chris Moore gives us a peek at a possible tomorrow.

WHAT WILL SPACE: THE NEXT MILLENNIUM BE like? Will humans colonize the galaxy, be exterminated by an asteroid, or be dubbed obsolete by our computer offspring? What are our dreams of the future, and how can we make them a reality? To address these questions, a special *Dreams to Reality* banquet was held at the International Space Development Conference in Houston, Texas in May 1999. Authors and scientists were assigned a topic to discuss with people at their tables and then shared their comments during a panel discussion after dinner. The following excerpted transcript is their collective vision of where we might be in space in 10, 100, and 1,000 years. The panelists:

Dr. Catherine Asaro, a former ballet dancer, has a Ph.D. in Chemical Physics and MA in Physics, both from Harvard. Asaro's critically acclaimed bestseller, *Primary Inversion*, was on the 1995 preliminary Nebula ballot, the *Locus* recommended reading list, and was a finalist for the Compton Crook Award. **Dr. Robert L. Forward** is a consulting scientist, future technologist, lecturer, and science fact and Science Fiction writer. The latest of his 13 published book-length works include *Indistinguishable From Magic* (a collection of short fiction stories and science fact articles); and SF novels *Reckonworld* and its four sequels. **Gregory R. Bennett** has more than 25 years of

experience in aerospace engineering, with responsibilities ranging from management to detailed technical analysis. He is Vice President of Spacecraft Development for Bigelow Aerospace in Las Vegas, Nevada. **Jan Nickman** is a two-time Emmy Award-winning director/producer of *The Mind's Eye* and *Planetary Traveler*—state-of-the-art 3-D computer animations available in video and DVD formats.

Dr. Geoffrey Landis is a scientist at the Ohio Aerospace Institute. With a Ph.D. in Physics, he recently won a fellowship from the NASA Institute of Advanced Concepts to study interstellar propulsion, is a Fellow of the NASA Institute of Advanced Concepts, and was an Instructor at the International Space University in 1998. He won a Nebula in 1980 for his story, "Ripples in the Dark Sea." His first novel, *Mars Crossing*, will be available in late 2000 from Tor Books. **Ken Jenks** has a degree in computer science, a Masters in Aerospace Engineering, and is working on a Ph.D. in Mechanical Engineering. He began working in the aerospace industry in 1969, first as a contractor, then as a civil servant with NASA. He is a private pilot, SCUBA diver, avid reader, and editor of *Mind's Eye Fiction* (<http://tale.com>)—an online publisher of short stories and novels. **Dr. Robert Zubrin** holds Masters degrees in Aeronautics and Astronautics and a Doctorate in Nuclear Engineering. He is the inventor of several unique concepts for space propulsion and exploration, the author of over 100 published technical and non-technical papers in the field, as well as the book *The Case for Mars: The Plan to Settle the Red Planet and Why We Must* published by the Free Press.

Marianne Dyson is a former NASA flight controller with a degree in physics. She is a member of the National Space Society's Board of Directors and Chaired the 1999 International Space Development Conference. A member of SFWA and SCBWI, her work has appeared in numerous national publications including *Ad Astra*, *Analog*, *Compressed Air*, *Odyssey*, *Poet's Market*, *Redbook*, *Scholastic News*, *Science Fiction Age*, and *Space News*. Her first children's book, *Space Station Science*, is now available from Scholastic.

ROBERT FORWARD: Our topic was transportation and propulsion. The only thing we seemed to talk about for the next 10 years was tethers. The important thing is that in the past few years, tethers have flown in space, and we know how powerful they can be. We can move around through space without rockets. My basic goal all during my professional life has been to find a method for moving through space other than rockets. I thought it was going to be solar sails, or light sails, but right now tethers seem the way to go. All we have to do is overcome the prejudice of the present administration, not only of NASA, but ultimately aerospace corporations, people who are firing off candles to burn.

As for the next 100 years, I've worked with JPL on solar sails that will fly so close to the Sun that they will get out to four hundred AU in 10 years. JPL thinks they can make



ABOVE: *Blade Runner* pictured a possible future that most of us would not choose to inhabit. BELOW: 2001 is just around the corner, yet its future still seems far away.

the sails. The next thing is to make laser-pushed light sails. I see that coming as long as Dan Goldin is at NASA because he wants to go to the stars. As for 1,000 years, we have to go to pixie dust [Pointed to Zubrin—a quote from his earlier talk]. I have a vest made with pixie dust here. I think that is what we will have in a 1,000 years. Considering the fact that our growth is exponential, we're talking about 10 to the 10. We can't really predict what it is going to be by then—it will be indistinguishable from magic.

GREG BENNETT: The topic at my table was commerce/business in 10/100/1000 years. Ron Jones was arguing that we should give up on worrying about things like space hotels and solar-power satellites and bases on the Moon and Mars until we solve the cheap access-to-space problem, which of course leads us right back to commerce and business in the next 10 or 100 years. We argued, and everyone agreed, we're going to do that by creating a demand for cheap access to space, and nothing else is going to create cheap access to space. Of course we drifted off in our conversation about Bigelow Aerospace building a space hotel.

If you missed my briefing on that, let me tell you Bigelow Aerospace is going to build space hotels. We are not a start-up company out looking for money. We've got the money and determination to do it. We don't know how long it is going to take. It's definitely driven by cheap access to space.

So, all you rocketeers out there, keep working your bums off and make it happen. If you give me a launcher that will put heavy cargo up there for \$500 a pound or less into low Earth orbit, we're going to have a thriving space tourism community. And that was the other thing that we really agreed on at our table unanimously—that the commercial thing that we're going to sell that's going to get us into space is tourism. Even if you can't afford a quarter-million-dollar ticket price for

a trip around the Moon, for every 100 passengers, there are going to be 50 crew, so start saving up or be prepared to clean rooms. We're going to need a lot of crewmembers to make this work.

JAN NICKMAN: The topic that we were supposed to discuss at our table was the business of entertainment in 10, 100, and 1,000 years. We moved on to a related topic—entertainment is key to the commercial viability of our venture into space from here on out. I



don't think anyone has any specifics because they weren't that accurate at the time, but when Neil Armstrong landed on the Moon, the rating share of that was better than any Super Bowl we've ever had. It is an incredible show, and an incredible opportunity, and it's being missed right now 100 percent. The reason why it is being missed, I understand this from others who know this better than I do, but the NASA charter prohibits being able to

charge for any use of anything having to do with the space program. So I think that, much like PBS has continued to move the line a little bit on what it considers a sponsorship as opposed to a commercial, we can do the same thing with the space program. We've got to do *The Mars Show*. What I'm talking about here is, like with the NFL—with they charge the TV networks hundreds of millions of dollars to air a game. Then in turn, the high bidder, a major network or whoever, gets ad revenue of hundreds of millions times hundreds of millions. So, there are hundreds and hundreds of millions of dollars to be made if NASA follows the NFL model.

I was also informed by Russ Filler that a more real-world idea on this would be to look at the space station because that is happening today. Yeah cool, Mars, but the space station is going on now. So, I guess what we've got to do is, instead of perhaps today looking at Mars, although I still want to work on that, I guess we also need to look at *The Space Station Show*. There is a lot of money to be made there, and we are continually talking about the commercialization and the privatization of space. It's time to look at it. One of the women at our table works at SGI, and she had an interesting proposal also on the commercialization of space, and that was that the name of the company that provides Internet domains—I forget—they have a virtual monopoly on that right now. Apparently, they have said that whoever comes up with an Internet server on the Moon first, and calls it *lunaz.com*, will have the Moon. There's another commercial venture. There is a lot of money out there willing to be spent by virtual sponsors to get exposure.

CATHERINE ASARO: At our table we talked about family life and education. First we talked about 10 years—we basically see it as an extrapolation of what we are doing now. We talked a lot about telepresence classrooms, virtual reality classrooms—getting kids out into space if not physically, inspiring them by getting them out there through robots, telepresence, virtual reality. I know a lot of us feel that our kids are learning things that we would never have been able to 10 or 20 years ago. In another 10 or 20 years, I think they will be learning at a remarkable level of sophistication.

We saw a lot of problems that need to be overcome in that time frame before we could achieve this wonderful dream of enhanced education, such as the separation of who has the technology and who doesn't. Also a problem of Will children become more isolated when they start learning out in space and making use of all these wonderful technologies—things like the Web, the Internet? Will they be sitting at their computers learning instead of interacting with parents and teachers? We see some wonderful possibilities, but we also saw some problems that should be addressed to make sure that we get the best of the possibilities. In 100 years, I think we were pretty much in agreement that by then

we will have families in space, the beginning of colonization of the solar system. There are some very interesting ideas; for example, some suggested creating a sort of space corps, along the lines of the military, like going to college—you would commit yourself to a certain number of years to go into space. By then there won't just be Ph.D. astronauts and pilots with all the experience going out—there will also be the rest of us folks. At that point, because you need people to support the colonies, you need to support family structures, entire community structures. You may be able to enlist in this space corps the same way you enlist in the military and go out and see the worlds and get your college education. Maybe that will mean going out to the colonies in the solar system.

In 1,000 years, it's hard to say. As the others said, we're talking about exponential technological abilities. By that time we'll have artificial intelligence combined with the human intellect. We will probably have evolved beyond what we are now. But I think we were fairly much agreed that by then we will probably be settling the galaxy. We were very optimistic at my table. Families and education will have moved out beyond the solar system.

GEOFFREY LANDIS: The topic for my table was new technology/robotics in 10, 100, and 1,000 years. In 1,000 years, we will all be robots! We won't be able to distinguish the humans from the robots in 1,000 years. A 1,000 years ago science, somebody at my

table pointed out, meant Earth, Air, Fire, and Water, the major elements. We can expect that 1,000 years from now, our understanding of physics will be at least as much rewritten, and possibly even more rewritten. We'll look back and snicker at how ignorant we were that we didn't realize there were other universes that we could go to—they are just nanometers away, just in a different direction or something.

A hundred years is a little bit easier maybe, but even that is tricky. I personally think that in 100 years, we will have human beings on every planet in the solar system, not just the Moon and Mars. We'll have human beings from the ice caps of Mercury, ice skating on the frozen lakes of Europa, scuba diving underneath Europa. We'll have human beings in the boiling oceans of Neptune, and everywhere in the solar system it is possible to go, we'll have people going there. And they will be going there by a wide variety of means. We'll be leaving Earth with rockets and tethers, nuclear-propelled spaceships, solar sails—we'll have just a hugely wide variety of ways of moving around the solar system. This is of course assuming that our mastery of technology does not destroy ourselves. But I think there is a good bet that we won't destroy ourselves.

There's a dozen companies that say that they can revolutionize space travel and make it cost 10 times less, or even less than 10 times less—and when you think about it you

say, they can't all be wrong. If one of them works, it will be great! There's no guarantee that any of them will work. It is possible that they will all be undercapitalized, which they are, and will fail. To quote one of my favorite philosophers, Yogi Berra, "It's real tough to predict the future, especially when it hasn't happened yet."

KEN JENKS: Our topic was medicine in space. We've had on the order of three hundred people in space so far, and that makes a pretty poor sample size if you're looking to do serious medicine. If I proposed to the *New England Journal of Medicine* that I was going to do a study on osteoporosis in older women, for example, and my sample size is three hundred, they'd throw me away and say come back when you have a real study. If we're going to do real space medicine, we need to get more people up there. We need to get them up there now. [Applause] Over the next 10 years, some of the things NASA is doing in cooperation with its international partners include much more careful research on everybody who goes into space.

Eighty percent of the astronauts have some problems with Space Adaptation Syndrome. Many of them are incapacitated for up to two days after arriving on orbit. We need to look at this initial transient period and try to find out how to overcome it. Many of the astronauts who have been in orbit for long periods of time have not had many lasting effects of that initial problem. But we need to look at



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what happens when people have been in space for two or three years. What happens to their bones? What happens to their muscles? We don't know yet.

The longest period on orbit has been on the order of four hundred days—a Russian cosmonaut. The longest period in the American program has been just over six months. So, we've had very limited experience with long-term exposure in space.

Over the next 100 years, we're also looking at geriatrics in space. Recent space shuttle missions with some highly famous astronaut have looked at some of these very preliminary issues. We need to look at what happens to humans as they age in space. Now it doesn't all revolve around zero gee. Maybe we are doomed to stick to planets because of radiation. Maybe our frail DNA can't withstand it. These are some of the aspects we need to look at over the next 100 years. Surely we are going to solve these things over the next 1,000 years. There are other aspects, including psychological aspects, physiological aspects, just the sheer isolation of being away from friends and family that cause some kinds of strange philosophical changes in the people who've been in space. We're only beginning to understand these things.

ZUBRIN: We were supposed to talk about terraforming. Naturally, we didn't stick to that subject. Nor did we obey the discipline of examining 10 years, 100 years, and 1,000 years, so I'm going to have to wing it. One of the people at the table brought up the question: Why aren't people thinking about colonizing Antarctica or the ocean? As difficult as it might be, clearly those are more hospitable environments than Mars. The answer of course is that we don't want to. [Laughter]

That is a very important answer. It is interesting that there are not conferences like this going on right now where people are discussing how they are going to colonize Antarctica. Nobody wants to. Why not? It's real simple: Because if people are going to do something impractical with their lives, they want to do something important. [Laughter] There are people who claim that humans are driven primarily by economic motives. It is certainly the case that if something has economic advantage, it will occur. But that doesn't explain how new things happen. The reason why new things happen, why new potentials are introduced into the world, is because people want to do something new that has never been done before—because people want to do something important with their lives. Plus, the fundamental motive of the human psyche is not the search for food, but the search for immortality.

Humans are only adapted to the tropics. We colonized the rest of the world despite the fact that we are not adapted because of our desire to see what is over the next hill, and live there and develop new means of living where we could not live before. It is for that reason that humans will explore space. We will go because we want to. Of course, not

everyone is willing to commit the resources required to open up the space frontier. It is a question of fighting against other priorities, because there are other ways of achieving immortality such as becoming notable conquerors.

Assuming that we do what we can do, I believe that 10 years from now, human beings will be walking on Mars. It took us eight years to get to the Moon the last time. Sending humans to Mars is a task of lower-order technology than going to the Moon in 1961. If the next president does want immortality, which they should, yes, there can be people walking on Mars. The significance of that will be the dawn of a new epic of human history, the beginning of humanity's change from a type 1 civilization to one that has mastered the resources of its planet to a type 2 civilization which eventually is one that has access and control of resources of its solar system.

If that occurs, then I believe that 100 years from now, there will be a new branch of human civilization on Mars. There will be millions of people living on Mars. There will be cities there. There will be a new culture there. It will have its own dialect, its own folklore, its own history of epic deeds that are told to its children. It will have made numerous contributions to human thought, human art, to literature, to technology, to pioneering new forms of human social organization. Because one of the great things about an open frontier is that it is a Tabula Rosa, where people can go and attempt a noble experiment, and implement ideas that are generally considered impractical in the settled and predefined homelands they have come from—give new ideas a chance. Martian ingenuity will be the wonder of the inner solar system 100 years from today, just as 19th-century Americans were already the wonder of the world by their time.

One thousand years from now, I believe there will be human colonies on tens of thousands of civilized stars circling planets within 50–60–70 light years, perhaps as far as 100 light years. We will have begun the transformation of humanity from a type 2 civilization to a type 3, one that has access to the resource of its galaxy. I also believe we will have discovered something by that time—that we are not alone. Already the discoveries of the present decade are giving us the clue, and as we now know that planetary systems are common, they are universal, the hints are there in the form of the evidence of life in the rocks from Mars. And if life is universal, then intelligent life is surely common. And we will encounter our peers, and we will discover that humanity is part of something much larger than anything we currently understand. When that happens, and when we join the galactic club, the people will look back on this time as the time of birth of not only humanity as a multiplanet culture, but as a real culture, a mature culture, one that is willing and able to participate in the development of the cosmos and help create the future in

its unknown and magnificent vastness.

MARIANNE DYSON: My topic was politics and government. In 10 years, we still see anything in space being run by governments on Earth. There will be a strong sense of nationalism. This ties into what Robert was saying about this being a turning point right now. Next year's elections are critical, because the new president at the beginning of the millennium is going to have the capability to lead us in a direction, and choose a direction, and help us get there. It really depends a lot on what happens next year, where we're going to be in 10 years. What we saw in 10 years—what we hope—is that we will have the property-rights problem solved.

We need to put a friendly regulatory environment in place, and make sure the government stays out of the way when it needs to stay out of the way. In the next 10 years, there are a lot of things that can happen that can really make a difference as to whether we are on Mars or whether we're going to still be here arguing about dropping bombs in Europe. In 100 years, we think that there will be people on Mars, and there will be people on the Moon, and in space stations, business parks, and so on.

But one of the things that will follow is that nationalism is going to change. Just like now, we see Europe as Europeans, we know there are Germans and French, and they might say they don't have anything to do with each other, but we see them as Europeans. When we have people living on the Moon and Mars and in space habitats, people will be Martians and Earthlings, and what will we call the folks on the Moon—Oh yes, Lunies, not Americans and Europeans or Japanese. People remaining on Earth will be more unified as a result. Part of this will be because of communications. Even in 100 years I doubt we will have gotten past the fight barrier problem. And like ships at sea, the people on Mars will not have 20 minutes to an hour to wait for some government back home to make a decision. When people's lives are at risk, local control will be necessary. The frontier will be a harsh environment, and therefore we see the government being semimilitary, like captains at sea. As people get more control over the environment and get comfortable, start worrying about water and sewers and so on, then the government will become more democratic.

In 1,000 years, we agreed with the others who said that people will be different—they will have adapted to their different environments. People may change themselves to have four arms because legs will not be useful in space. There will be all kinds of issues about who is human and what rights people have. There may be people who live in space all the time instead of on planets—Gerard O'Neil said that the surface of planets was not the future of the human race but living in space itself is. The sooner we get all our eggs out of this one basket, the better the chance that we will be around in 1,000 years to argue about taxes and robot rights and so on. □

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To win the war on drugs, General Meech chose a tool that would be a tough pill for America to swallow.

Bitter Pills

By Bruce Holland Rogers

Illustration by David Beck

THE DAY WAS BRIGHT WITH SUNSHINE. AS THE DRIVER STEERED GENERAL MEECH'S CAR TOWARD THE Justice building, the monuments of the capital gleamed, and the reflecting pools glittered. A week ago, the cherry blossoms had been at their peak. Now they were past it, and petals fell like pink snow on the green lawns. A few tourists, most of them in red and blue America First uniforms, strolled under the blue sky. It was, General Meech thought, a beautiful day. Sunshine bright enough to give a man a headache. A beautiful day in spite of everything. The thought depressed him. Many things could depress him in these gaps between the two compartments of his life: hospital and job.

It helped that he was always late these days, that he didn't have time to pick up the summaries that were faxed to his home before meetings. Home was another gap, another transition to minimize if he could.

Every workday, he had to hit the ground running, with no time to dwell on the other part of his life. His driver would drop him off in front of Justice where one of the DEA aides would hand him a folder full of things he should have read the night before. The aide would tell him what the highlights were on the way to the conference room, and he'd leave the hospital and what was happening there behind.

But when the driver stopped the car, Meech saw that the aide waiting for him was someone new, a woman with concern written all over her face. He hoped she would keep to business, but he guessed that she wouldn't.

"General Meech," she said, handing him a manila folder. "Good morning, sir. I'm Pamela Ross." She wasn't wearing an actual AF uniform, but her jacket was red and her skirt was blue. As if to dispel any doubt, she wore an America First flag pin on her lapel.

He opened the folder, looked at the headings and first lines of the first three pages, then closed the folder. "I need a briefing on the fly," he said, starting up the steps. "You've read these?"

She followed him. "Yes, sir."

"Then let's see if you're any good. What do I most need to know?"

"Dreamrail is proliferating. There are instructions all over the Web on how to make various versions of the drug. Even though some of the steps are tricky, the necessary equipment isn't anything that a high school chemistry lab wouldn't have." She paused while they showed identification to the Federal Police guards and passed through the metal detectors, then finished her thought on the other side: "So the ban on possession, manufacture, and importation isn't going to be enough to—"

"Old news."

She got to the elevator ahead of him and pushed the up button. "The mental health profession is protesting the ban, and not just in San Francisco, now. You've got psychotherapists all over the country claiming positive results in treating depression, sleep disorders, and a wide range of—"

"Old news again, Ms. Ross. You're giving me superficialities. What do these reports really tell you?"

She frowned, then nodded. "All right. What I see in those reports is that you don't have a lot of support internally for this skirmish in the drug war."

"That's better. I already knew that, but that's more the kind of thinking that is useful to me. Give me your opinion, based on these." He waved the folder. "Who can I rely on?"

A chime sounded and the doors slid open. As Meech motioned her into the elevator ahead of him, Ross said, "Koch. McAlester."

"That's it?"

"In my opinion, yes."

"Irwin?"

"The attorney general isn't entirely above politics. He never liked your special powers to begin with. He thinks they're extracostitutional."

"He's right," Meech said as the doors closed. He pressed the button for their floor. "They probably are. But they've been necessary."

"Reading between the lines, I would say that he thinks that bringing the full weight of your authority down against this drug is a political mistake."

"Where do you get that?"

She opened the manila folder and selected a page. Meech read it and was reading it a second time as the elevator doors opened and they stepped out. The corridor was empty.

"Hm," Meech said as he finished the page. "For an enforcement plan, it is lukewarm for him."

"No one's coming out and saying that this is a street drug that you should just ignore, but only Koch and McAlester are enthusiastic about mounting a real campaign against it. And Koch won't be at the meeting today. If you're going to get a mutiny, today will be the day."

A *wedding*. Ms. Ross had quite a sense of drama. Well, she was young. He almost smiled. At least she was taking her job seriously.

Ross lightly touched the elbow of Meech's uniform. "General, how is your son?"

Daman. He had actually forgotten for a brief moment. Meech looked at her hand until she took it away.

"I'm sorry," she said. "I didn't mean to—"

"You're new," he said. "Whoever told you that personal questions of your superiors would help you out in this job wasn't doing you a favor."

"No one told me to ... I just, I mean, I heard about your son, and my own situation is so—"

"I'll tell you this exactly once. Work is my respite from private concerns. Do you understand? I don't mix them."

She looked him in the eyes, and he saw her set aside both concern and embarrassment. In an instant, she wore an entirely serious, entirely professional mask. She stood up straight, at attention. She was so very young that she had probably learned that expression, that posture, as a little girl, as an AF Scout. "I understand."

"Good," he said, meaning it. "That's very good. You can go now."

ROSS MIGHT HAVE BLUNDERED PAST THE BOUNDARIES OF PROFESSIONALISM, but the woman was smart. She had been right about the resistance Meech found in the meeting. Perhaps *wedding* hadn't been an overly dramatic word after all.

Commissioner Ho led off the meeting with a report on tourist use of Dreamrail. The drug was legal in Canada, Mexico, most of the Caribbean, and all of Europe. American tourists were using their one week of legal vacation to book trips specifically to use the drug, and even if they weren't trying to smuggle the stuff back in—and mostly they weren't, in the face of immediate, at-the-border sentencing to long prison terms—they were bringing back stories about how wonderful and absolutely harmless the stuff was.

"And your point?" said General Meech.

"His point," said Attorney General Irwin, leaning back in his chair, "is that you might be able to stop the substance at the border, but you aren't going to stop the attitudes people are bringing back."

"Doesn't matter what you do or don't stop at the border," put in Jerry Pike, the DEA chemist. "You've got labs springing up all over the place. This stuff is harder to make than methamphetamine, but the demand is higher than it ever was for meth."

"We put a lid on methamphetamine," said Meech. "We'll put a lid on this."

"Not the same way, you won't," Pike said. "The precursors to Dreamrail are too damn common. You can't outlaw the ingredients, General. It's alcohol all over again."

Meech frowned. Alcohol use had been impossible to eradicate a hundred years ago, and it wasn't proving much easier to do away with now. He asked Administrator McAlester what she thought. She smiled a bitter smile. "Looks like we have another real challenge in front of us."

"My thought exactly."

The attorney general sighed. "General, I think you're going to burn up a lot of money and good will going after a harmless drug."

"Harmless?" said Meech. "You mean like alcohol? Or tobacco?"

"Those were outlawed with good reason," Irwin said. "There were real health issues. Dreamrail doesn't seem to do any physical damage to anyone. We're losing hearts and minds on this."

"That's what I'm saying," Ho agreed.

"Losing hearts and minds?" said McAlester. She shook her head. "It will be worse if we care in. Dreamrail is a gateway drug. People who try it will want to try other things."

"But it only works when you're asleep," Irwin said. "It's not like other drugs. Giving yourself a particular dream when you're asleep anyway ... I just don't see how that will lead to an appetite for marijuana or alcohol. It doesn't interfere with on-the-job productivity, or—"

"It sanctions weakness," General Meech said. "Isn't that enough? Isn't that the path that we don't want the country to travel again?"

"I'm not sure it matters what we want," the attorney general said. "We can't get this one back in the bottle."

"No, we probably can't," Meech agreed.

McAlester looked surprised and was about to say something, but Meech held up his hand. "I don't think we'll ever get Dreamrail off the streets entirely. But we don't have to." He turned to the DEA chemist. "Pike, we know how the drug works, right?"

"Basically, yes. Site-selective mimicry of neurotransmitters. You jiggle certain connections in a sleeping brain, sites that are activated by sensations of buoyancy, say, and you get a dream of flying. Jiggle a different set, you get sexy dreams. There are other components. Takes trial and error to get a version that elicits a dream, and it only gives you a general type of dream. The user's own experiences—"

Meech cut him off with a wave of his hand. "Yes. Right. Can Dreamrail give you nightmares?"

"Not the stuff that anyone actually manufactures, no. Who would buy that? But every time someone alters the structure of the drug a little, it stimulates different sites in the brain. We know that some formulations have generated nightmares."

"Then that's what I want you to do. I want you to come up with

"This little devil pulls you to sleep and won't let you up while you dream of torture and death."

some varieties of Dreamail that generate nightmares. Sweat-in-your-sheets-and-hope-to-die nightmares. Can you do it?"

Pike shrugged. "Shouldn't be hard."

"I don't see the point," said the attorney general.

McAlester was smiling, though. She said, "I do."

GENERAL MEECH HAD ALWAYS THOUGHT OF fluorescent lights as unhealthy, but that's what the hospital used. They were cheap, efficient. In that unhealthy bluish light, he sat on the edge of the cot next to his son's bed, holding Aaron's hand while the boy used his free hand to pick at bugs on the sheets that weren't there. Aaron brushed the invisible mits away, then looked up suddenly. He stared at a space above the window. He pointed.

General Meech followed Aaron's gaze. The boy pointed emphatically. He looked frightened.

"What?" Meech said.

Aaron squinted. He seemed for a moment to be unsure of what he was seeing. "Bird."

There was no bird.

From the doorway at Meech's back came a woman's voice. "It's common at this stage."

The general turned. A nurse stood there holding a clipboard. Meech wondered how long she had been watching.

"Picking at the sheets, hallucinating," she said. "It happens with them a lot at this stage. His organs can't process toxins, his brain doesn't get enough oxygen ... So, hallucinations."

There. It happens with them a lot at this stage.

Meech wanted to say, *This is my son Aaron. He's just shy of making Eagle Scout. He's good at math, Mandarin, and Cantonese, and his teachers complain that his homework is messy. He bakes cookies. Sometimes he burps them. When he was little, his favorite story was Stella Luna. His favorite color is ... I don't know what his favorite color is. I wish I did. He is not a them of any kind. This is Aaron.*

He said, "What should I do?"

"You can humor him. Shoo the bird away."

Meech went to the window and waved his arms. He looked back at his son. "Is it gone?"

Aaron squinted, then looked relieved and lay back down.

"Thank you," Meech said. The nurse nodded solemnly.

Later, when she finished her evening as a volunteer tutor, Caroline came to take her turn at Aaron's bedside. They didn't embrace. At the beginning of Aaron's treatments, they had hugged one another often. Now it was too painful. A counselor from the hospital had told them that often marriages did not survive the death of a child. The general and his wife had made no explicit agreement, but they both understood that if they were going to keep this marriage together after Aaron died, what they needed was discipline and focus.

Caroline said, "Did he say anything today?"

The general shook his head. Aaron had said *Bird*, but the omission was easier than the explanation that would have to come with it. In the last few days, Aaron had spoken less and less.

"We ate some pudding," Meech said. Aaron hadn't touched the rest of his dinner. As the cancer had progressed through its late stages, Aaron had wanted simpler and simpler foods. First he lost his appetite for meats, then for fruits and vegetables. Bit by bit, the boy was closing off the pleasures of being alive. Bit by bit, Aaron was getting ready to be dead.

"He's been so brave," Caroline said.

It was true. Aaron's stoicism in the face of death was something he couldn't understand. Yes, the boy had been raised in a time when the

whole country was learning to be strong, to set aside personal wants, to knuckle down and try to compete with the Chinese who were out-building, out-inventing, and out-competing the once-decadent west. But how had that translated into a 14-year-old boy's composure in the face of death, in the face of all the things he would never experience ...

"Don't you think he's been brave?" Caroline said.

Meech nodded. He couldn't open his mouth. The sound that would come out would not be words. He left the room without speaking.

He got home exhausted. It was after 11, and Brian, his older son, was not home. Probably he was out with that Chip Cross and the others. Cross's eyes were always bloodshot, and the general, the nation's top drug enforcement officer, had a good idea why. Brian had always been a handful, but lately ...

There was no point in waiting up for Brian. If he came home drugged on alcohol or marijuana, he likely wouldn't remember any lectures Meech gave him. And the general had already told him, "When you get caught, and you will get caught, don't think your stint of prison labor will be like anyone else's. You're my son, Brian."

"I noticed. So, go."

"I'll tell you *so go*, damn it! If you're arrested, I'll have to petition for the severest sentence. I'll have to. So you just think a goddamn minute before you go breaking the drug laws!"

Brian had hung his head and said, "*Meishi*."

Chinese that had become American slang. *So go. Meishi*. In Meech's youth, teens were at least disrespectful in English. *Yeah, so? Whatever*.

WHEN ROSS MET MEECH AT THE CURB THIS TIME, SHE WAS admirably business like. She said nothing that even hinted of her own difficulties—whatever those might be—or of any personal concern about Meech, though the general had not slept the previous night and knew he looked it.

In the conference room, Pike held two pea-green pills, one in each hand. "They look identical," he said. "Take this one, and you get the latest Dreamail experience. The outer shell is melatonin to lull you to sleep. Time-release layers give you a dream that starts out with flying, becomes a dream about beautiful vistas, and ends with sex."

"And the other?" said Meech.

"Take this little devil," the chemist said, "and a more powerful soporific—a Class Four drug, so we aren't bending any of our own rules—pulls you into sleep and won't let you up while you dream successively of torture, disease, and death. Well, that's approximately what you'll dream about. We find the nightmares harder to control for content. But whatever the details, you'll hate it, and you won't be able to wake up."

McAlester grinned. She said, "I like it."

"I'm not sure," said Attorney General Irwin. "How are you going to get it into the pipeline?"

"Oh, that's no problem," said FBI Deputy Director Koch. He had missed their earlier meeting, but he'd read the interim reports. "We'll use our usual interdiction and raid methods, but with a difference. We won't confiscate Dreamail. We'll just salt it with our own pills."

"The general proposes to lift the import ban," said Commissioner Ho.

"Right," said Meech, "and make the penalties for clandestine manufacture more severe. I'm thinking of invoking the Foxo Amendment." Irwin said, "Jesus! You expect justice to follow through?"

"We won't need many executions," Meech said.

"Just enough to get everyone's attention," McAlester added. "Alcohol took a real dive after the public hanging of the Phoenix Five." "Then went back up again," said Attorney General Irwin. "And that was pretty much the end of the Hatch Administration, you may recall."

"I'm hoping there won't have to be any executions," Meech said.

"If you're going to get a mutiny, today will be the day."

"There will be tough price competition from the importers."

"Whose shipments we will hold up briefly at the border for processing," said Ho. "We'll add nightmares to the mix at a ratio of three to one."

PIKE HANDED A LITTLE PLASTIC BAG FULL OF colored pills to McAlester, who passed it to Irwin, who gave it to Koch. "We're able to mimic whatever their pills look like. These are all the right color and shape for various kinds of Dreamrail that are on the street. But these are all nightmares."

When the bag came to General Meech, he kept it.

"What do you think?" Koch said to the attorney general. "Would you want to take a little dream pill if the chances were three to one that you'd have a nightmare instead?"

"This won't work," the attorney general said. "Users will pay a premium to get pure Dreamrail. You'll get clandestine manufacture anyway."

"And where we do," Meech told him, "we won't shut it down right away. We'll just break in and add nightmares to the output."

"The supply in other countries won't be affected."

"So for one week a year," Meech said, "Americans can leave the country for their drug experience. It's not as if it doesn't already happen. If they try to bring the stuff back in, Ho's guys will catch them at the border and either confiscate the pills outright or add nightmares, depending on how quickly we can create pills that mimic the import in color and shape."

"I say we try," McAlester said.

Koch said, "Agreed."

Ho shrugged. "It's a way of addressing the problem. I don't see what else we can do short of a broader use of the Foxxy Amendment."

Pike was eager to get the go-ahead, Meech could tell. The process of creating ever more horrible nightmare pills would be an exciting challenge to him and his cohort. But he did have one last observation to put in. "You realize," the chemist said, "that there will probably be people who will like the nightmares."

"Those aren't people we need to worry about," General Meech said. "Trust me on that."

AT THE HOSPITAL, AARON WAS COMATOSE. HIS BREATHING WAS LABORED, phlegmy.

A nurse's aide came in to turn Aaron and check his oxygen supply. She was a big, strong, brown-skinned woman. "Needs his pillow freshened," she said. The general helped hold Aaron in a sitting position while the woman plumped the pillow, then laid Aaron gently back.

"His breathing sounds awful," Meech said.

"So often, it's pneumonia takes them." Somehow, it was all right for her to say that.

"How long?"

"Nobody but the Lord can say, if you don't mind my saying so."

"I don't mind."

"Might be, he can still hear you. I know it doesn't seem likely, but they do say that people in a coma can hear."

"Yes. I'd heard that."

On her way out, she said casually, "I'll pray for you."

"Thank you," General Meech tried to say, but it came out as only a whisper. Then he opened his bag and took out *Stella Luma*. In a broken voice, he read the story to his son for a last time.

When he went home, Meech found that Brian was out again. He was going to lose them both. Aaron would be dead, and Brian There was a First Military Academy that would take him. They could keep Brian clean, probably, but Meech doubted that they could actually turn him around, and he'd be 18 soon enough that he'd be back out with the same friends and the same problems, only he'd be hating his father.

One way or another, Brian was going to be lost to Meech for a long, long time. And the terrible truth was that Meech had loved Aaron more almost from the moment Aaron was born, and Brian had known it. Of course he had known it.

Meech found the bag of pills in the pocket of his uniform jacket. Before bed, he swallowed a nightmare.

WHEN MEECH WOKE UP, HE LAY VERY STILL FOR A LONG TIME IN THE twisted sheets. He looked at his hands, where there was still skin. It hadn't been stripped away, strip by bloody strip. There were no white worms wriggling hungrily through his flesh.

He sat up, shivered with the memory. But it had all been just a nightmare. Caroline was alive. She would be sleeping safely at the hospital. Brian hadn't died. Aaron ...

He closed his eyes. Oh, Aaron.

But Caroline hadn't died. Brian was still alive. Meech himself wasn't dying, wasn't wasting away or bleeding to death or being eaten from the inside. He wasn't feeling his bones grind apart in some machinery that relentlessly chewed up from his feet to his hips. He wasn't suffocating. He wasn't the last person alive in a desolate world. None of the things that had happened last night in his dreams were true.

The phone rang as Meech stumbled into the bathroom and opened the shower door. He hesitated. He could let it ring. He could turn the water on in the shower so he wouldn't be able to hear the answering machine pick up, wouldn't be able to hear the message.

He answered the phone on the fourth ring.

HIS DRIVER DROPPED HIM OFF AN HOUR AND A HALF LATER ON THE front steps of Justice. An aide was waiting for him. "General," she said.

"Ms. Ross." He accepted the folder.

"This is going to be quite a project."

"Quite a project," he agreed as he walked up the steps, flipping through the first pages. Then he closed the folder.

They waited for the elevator in silence, rode up in silence, walked in silence toward the conference room.

The general stopped. "Ms. Ross," he said, "not long ago, you asked me a personal question."

"Yes, sir," she said. "And I apologized." She had that look again. Focused. Serious.

"I was a little hard on you."

"We've got our jobs to do, sir," she said. "The whole country does."

"Yes, we do," he agreed. "We've got our work cut out for us." He tapped the folder against the palm of his hand. "Well, for the record, about my personal life ..."

"It's really none of my business, sir."

"No," he agreed. "But for the record, I just thought I would let you know, things could be worse."

She looked at him, really looked at him, really seemed to be trying to understand. But she didn't. Clearly she didn't. One had to experience these things oneself to understand.

"Things all right in your life, Ms. Ross? In your personal life, I mean? Not that it's any of my business."

"Not that it's any of your business," she agreed.

He saw something else in her eyes, some grief of her own that had sparked the concern he had seen, had *drained* when he first met her. She had lost someone. Or was losing someone. Or something else had gone terribly wrong in her life.

General Meech took the bag of pills out of his pocket. She looked surprised, but accepted them. Then she opened the conference room door for him.

"Could be worse," the general said. "Things could always be worse." □

APOTHECARY BLUE

After Kracker became the first man to walk to the Moon, he discovered that there were other things far more difficult—like survival.

by robert reed

Tests were being made ... they were always measuring some little piece of her ... and after what felt like an unbearable age of doing nothing, she moved her legs. Just to keep herself busy. One leg kicked, and she pushed herself up through the dense amnionic fluid, flinging her body against the mushy wall. Then after she drifted down again, she let her other leg kick, again launching her strong young body, repeating a motion that she had practiced on countless occasions.

"Stop that," angry voices growled.

This was how she would run, when the time came.

"Blue," rumbled a certain voice. A man's voice.

She stopped herself, feeling a little ashamed.

Just a little bit. Letting her body drift to the bottom of the chamber, Blue let her legs and arms go limp.

"Be good," the voice admonished her.

"But this is so boring," she protested.

To which her father said, "Think of your family, darling. And hold still."

THE FIRST TIME KRACKER SAW THE MOON, HE WAS WALKING ON IT.

One moment, he was at the assembly point outside Pensacola, standing beneath a big lime-green tent, stripped naked and surrounded by naked soldiers. "It's just like your training holos," their sergeant barked. "Follow the bridge right through, gentlemen." Because someone had to be first, and because Kracker didn't much like standing around with bare-assed men, he was the first one to move, walking past a row of slick gray machines that were clicking and humming, busily keeping the bridge open. The ground in front of him was sand and sun-starved weeds. Then with the next long step, the sand seemed to flow, soundlessly pulling back to reveal a hole that reached down into what looked like a vein of pure black anthracite. At first glance, the hole was barely wide enough for a skanky leg. But Kracker took another step—a little one—and the hole exploded outward. Instantly miles across, its glossy black sides were shaped like a funnel, the steep sides plunging into an even deeper blackness.

Behind him, the sergeant called out, "That's the way to do it, gentlemen. Follow Mr. Leevess."

Kracker felt a surge of pride.

Then with the next little step, he was inside the hole. The bridge. Whatever they were calling it today. The blackness beneath him seemed to move, swirling fast around his bare white feet. Except he couldn't feel his feet anymore. This was like walking through a dream, marching down some infinite dream slope, covering those impossible miles with just a few baby steps. And somewhere he found himself walking uphill instead of down, his feet and all of his body still numb. But he kept forcing those dream-legs to move, just as he'd done during those ridiculous, inadequate, training holos.

One more step brought Kracker to the Moon.

He was naked, like before. Naked and standing inside an enormous, heavily armored and airtight bunker.

Regardless what you wore into a bridge, you came across naked. That was just one of the rules. Only intelligent creatures were allowed across an open bridge, and they couldn't take anything with them. Not clothes. Not tools. And never any weapons. Except for your own fists and teeth, of course.

Kracker was standing on a cool, slick floor of gray glass. What he did first was jump up. Just a little jump. Just to feel the Moon's gravity take a lazy moment to grab him and ease him back to the floor.

Then the others arrived. The bridge was visible, a red X pointed on the floor; there weren't any clicking gray machines at this end. Young men simply stepped into existence, looking the same as before, smiling and laughing, most of them swaggering up to a long iron urinal where they happily relieved themselves. That was one of the military's rules: Because water was scarce on the Moon, you always came here fully hydrated.

Everyone was peeing when a booming voice came across a public address system, telling them, "This is your lieutenant." He had come up two days ago. "Your gear is labeled and waiting for you. Make ready, then report immediately to the barracks."

Kracker's gear included an armored lifesuit—one of a thousand black-and-silver suits stockpiled inside this enormous bunker—plus a military wardrobe with UN colors and standard vacuum railguns and field rations and tools that he hopefully wouldn't need during this three-month posting, and a portable library with his favorite books and movies, and digitals of his sisters and parents, and a few personal possessions that came up inside the last supply bullet. It took Kracker almost 20 minutes to find everything and dress himself. Most of the other men were faster. The sergeant was the last man across the bridge, but he was ready before anyone. A tall, beefy, and plain-faced man with a mouth-hugging mustache, he could be brutally stern and profoundly warm in the same instant, and he had a gift for making soldiers hungry to earn his hard-to-win respect.

Across the standard channel, the sergeant asked, "Is there a problem, Mr. Leevess?"

"No problems here, sir." Leevess was his family name. Only the sergeant and lieutenant called him that.

"Remember, son. Run your diagnostics while you dress yourself..."

"Yes, sir."

A gloved hand patted Kracker on the armored shoulder, and a warm voice remarked, "But finish that checklist. Vacuum duty is never the place for mistakes."

"I will, sir."

Kracker was last into the airlock. But only barely. The chamber was so crowded with men and equipment that he had to back in, and looking out at row after row of stockpiled lifesuits, he wondered why so much equipment had been brought up here already. The colonists weren't arriving for another year. There were only three platoons at this post. Plus the UN engineers, of course. It seemed like a waste. But this was the military; he reminded himself as the inner door closed and sealed. A sharp wind turned to a whistle, then diminished into a perfect silence, and the outer door split and fell open. The platoon filed outside. Kracker found himself looking across a wide glass street, watching a platoon of scorpion-like robots working on a long stone building, the weirdness illuminated by a reflected sunlight.

New Pensacola, this city had been dubbed.

A stupid name, if anyone bothered to ask him.

"We're moving," the sergeant announced. A long arm waved as the deep voice said, "To the end of the street, gentlemen. Then it's just a ride up to the barracks."

Stepping from the airlock, Kracker paused, his breath turning to frost as he stared at the new sky. New Pensacola was near the lunar south pole. Nestled on the floor of a small impact crater, the unfinished city lay out of reach of the Sun. Night held sway most of the year. Which meant that when he looked up, Kracker could plainly see the ghostly reflection of the Moon.

Just like back home, this sky had changed.

Standing on that wide new street, left behind by his platoon, Kracker examined the airless and cratered and dust-cloaked face of the Moon. The nearside face was in daylight, he realized. A full Moon, they used to call this. Back in those old days when a person could stand outdoors and see things like the Moon.

"Mr. Leevess" barked a familiar voice.

"Coming sergeant," blurted Kracker. Then he began to run in long, slow strides that couldn't help but look happy.

SIMON JEFFERIES WAS 10 YEARS OLD WHEN THE EARTH'S SKY CHANGED.

He and his parents had just emigrated to New Zealand. In that part of the world, the Change happened in the afternoon. It was August, and winter, and a lazy cold rain was falling out of the seamless gray-black clouds, and Jefferies, still without friends in his new country, was sitting indoors, playing against one of his video AIs. Years later, he could still remember the game. He was shooting villains and stealing weapons-grade plutonium, trying to build the bomb that would destroy the enemy city... saving the world and humanity in the process, becoming a hero in that simple and tiny digital universe...

Meanwhile, the universe outside was remaking itself.

The boy continued mastering his game. The phone rang and his mother picked up in the kitchen, and after a few words and a puzzled silence, she wandered into the parlor—a lovely tall woman who was rarely troubled by anything—and with a breathless little voice, she reported, "That was your father. Something has gone wrong with the sky."

Jefferies never finished building his bomb.

Instead, he jumped to the news, watching nervous reporters chatter about images coming in from sunny places and places where the night sky should be filled with stars. Like everyone else, the boy was astonished. Confused. And doubtful. How could something so enormous happen and nobody felt it? Sitting by the window, Jefferies watched the sky as well as the television, praying for a break in the clouds. His biggest fear was that this new sky was an illusion, and temporary, and the storms above Palmerston North wouldn't clear in time for him to see this wonder with his own eyes.

But it wasn't a simple illusion; and the old sky was lost forever.

In an instant, the stars and Moon and planets had vanished. Or more accurately, their feeble glow now appeared as a tiny patch of smeared,

anonymous light always directly overhead. The Sun continued rising and falling on schedule; horizons and seasons were exactly as they should be. Satellites continued to send and receive the important news of the day, as well as the trivial. But in the night, and to a lesser degree by day, the heavens were filled with the faint blue and white and emerald image of the Earth itself—the great Pacific and drab Australia and faraway America all everted and suspended overhead by some remarkable, never-suspected trick of Nature.

After that, year by stubborn year, people decided what must have

the United Nations, ordering him to work the same magic, building a completely new city up on the Moon.

The real universe—this efficient, rebuilt wonderscape—was packed thick with worlds. Every flavor of planet lay stuck inside a complex, mostly invisible matrix that folded back and forth on itself. According to the weird mathematics, the Earth was just close to everywhere else, it also physically touched billions of worlds. Alien ones, and familiar ones, too. Like the Moon.

Where two bodies in space touched one another, there were portals.

The stars and Moon and planets had vanished.

happened during the Change. Of course every nation threw its wealth and best minds at the problem. In an instant, thousands of Earth-based observatories had been rendered obsolete. But the eversion ended in the upper reaches of the atmosphere. Fly high enough, or go anywhere else in the solar system, and the familiar stars still ruled the heavens. That's why new telescopes and radio arrays were built on the Moon. On nearside and farside, both. The old sky was scoured for clues. For symptoms. For any little enlightenment. And meanwhile, physicists armed with all the peculiar mathematics uncovered the possibility—the bizarre and confusing and mostly unwelcome possibility—that the original sky had always been an illusion. Stars and galaxies might have existed once. In a very remote past, probably. But some force or grand intelligence had emerged, and that wilderness of suns and dust and raw light had been erased. Renovated. The original universe of farting galaxies was reformulated into something more efficient, and more complicated, and by every lucid standard, far more strange.

What the old sky had been, more or less, was a careful reminder of what had once been. Left behind by purpose, or by chance.

But why did that sky vanish?

Eventually the lunar observatories answered the question, if only by accident. The newest array of mirrors—the great North Eye facility—came online. As they began examining the details of an obscure, just-born galaxy, the lunar sky everted. Without fuss or so much as a shiver, the illusion of stars dissolved, replaced by the familiar dark maria and whitish rays and the crater-choked highlands where nothing significant had happened for billions of years.

The observatories were the trigger.

It had happened on the Moon exactly as it happened on the Earth.

Gaze too hard at your stars—demand too much from that impoverished rim of photons and cosmic rays—and the fantasy simply and forever collapses.

Once or twice, trying to feed his own curiosity, Jefferies played with the Change Theory's mathematics. And he wasn't a stupid human by any means. An engineer by training and by outlook, he understood the essentials of a dozen advanced technologies. Robots. High-strength ceramics. AI software. Fluid dynamics, and so on. But these things were black-and-white simple next to the conformed, anti-intuitive constructions that described the real shape of the universe. In the end, Jefferies was left frustrated and feeling stupid, nothing gained but a kind of dumbfounded awe about Everything.

With the lunar sky everted, those billion-dollar observatories were useless. There was an instant exodus from the Moon. Astronomers and technicians and support crews filled every homebound shuttle. Except for a few miners and their fleets of robots, nobody seemed willing to linger on that dead dry ball of rock.

But then, another bombshell discovery was made.

Jefferies was a colonel with the New Zealand Defense Forces. He had just finished a two-year stint in one of the dry valleys in Antarctica, helping build a comfortable, environmentally gentle city for that continent's growing population. It was a demanding job, and successful, and his bosses were so proud of his accomplishments and what it would mean for national honor, they loaned Jefferies and his team to

Intrusions.

Or in the language of the moment: Bridges.

Most bridges were impassable. But if you found the right bridge, and if you had the machinery to tease it open at either end, a person could step through and find himself standing on the barren dust of Mars. Or the bright new ice of Europa. Or balanced on the lip of some vast lunar crater.

Domes and underwear, breathable air and potable water still had to be shipped from home or manufactured on site. Because you came across wearing nothing but your natural skin and lungs and the rest of your mammalian physiology. And there was another restriction, Jefferies learned. The far end of a bridge had to have experience with human beings. Otherwise, it wouldn't "know" how to conjure a human being out of the ethereal nothingness.

"But really," his teacher explained, "for being complicated and arbitrary and all the rest, this is surprisingly simple stuff."

She was a smiling American, 40-ish and pretty, with radiant brown eyes and an unexplained expertise in these odd matters. She pointed at the team's commander, saying, "Colonel Jefferies. If I wanted, I could send you to almost any corner of the Moon. And why? Because it's been thoroughly explored, either on foot or by close flyers. That means that every Earth-Moon bridge—and there are hundreds of them—can rebuild you at the other end. Instantly. You'd emerge with the same face, the same height, and the very same build that you have now." Then she gave him a little wink, adding, "Or if I wanted, I could send you to Mars. But only to nine places so far. And only three of them have sealed, safe environments waiting for you."

Lieutenant Barker—the perpetual comic—blurted out, "Where else can you put him?"

Everyone laughed amiably.

Then the woman calmly said, "Mercury. There's a bridge that begins on Easter Island, and it leads straight to Mercury's north pole. A three-woman team is on site now. The first dome is almost ready. Self-replicating robots and AI shepherds have been launched by orbiting railguns. When they arrive, in the next days and weeks, they'll start to build a spacious, completely livable new city."

A stunned silence took hold of the room.

"Within two years," she promised, "a hundred thousand colonists will walk to Mercury. Yes, I said, 'walk.' No need for expensive space-ships and elaborate life-support systems. No hazardous voyages or months in freefall." She gave the engineers a little moment to digest the news, then continued. "At this moment, small teams are en route to Callisto and Titan and half a hundred useful asteroids. Armies of robots are being built around the world and launched by our government's railguns. Official announcements will be made in a few weeks. This is a UN operation, entirely. Nothing of this scale has ever been attempted. Our plan calls for widescale emigration to the new worlds. According to projections, within the next 30 years, a third of our world's population will be living on worlds scattered across the solar system. And all of us, regardless of where we live, will be able to walk from world to world whenever we feel the urge..."

Later, alone with his teacher, Jefferies asked, "What else do we know?"

She looked into his face for a long moment. Then she casually remarked, "You weren't born in New Zealand. Were you?"

His father was English. His mother, full-blooded Zulu. They emigrated during a stormy time in the home country. But he didn't see any reason to mention his family's interesting history, and he certainly hadn't forgotten his question. With a quiet, strong voice, he asked again, "What else do we know?"

In a very careful way, she said, "What do you mean?"

"You know exactly what I mean."

She sat up in bed, calmly scratching the underside of one small breast. Then she let Jefferies see her smile, and again, she ignored the question.

The universe was remaking itself.

"Because I was thinking," he admitted. "Suppose we opened up a bridge to an alien world. We opened it and stepped through ... into a world that has a breathable atmosphere, and its own life forms ..."

"We can't," she replied. "You know that."

"Because that other world doesn't know how to build us. That's what I heard in class. I remember." Gray thoughts remained gray, but Jefferies began to perceive the clear outlines of his argument. "Except there could be an intelligent species there. Just for the argument's sake, let's say that she's exactly as smart as us. It's perfectly adapted to its own world. And the bridge certainly knows how to build her."

The woman placed the flat of her hand against his bare chest, and in the quietest possible voice, she said, "I didn't tell you that."

"What did you say?"

"Exactly," she said. "Thank you."

SHE ASKED ABOUT HER NAME.

"Apothecary," her father explained, "is a very old word. A very exceptional word. It refers to someone who dispenses medicine to the sick and the weak."

She had to smile, knowing that.

"And Blue is one of the essential colors of life," he promised. "One of these very beautiful colors, as it happens. Darling."

THIS MIGHT BE A NEW WORLD, KRACKER REALIZED. BUT HE WAS STILL a soldier, still living by a soldier's relentless routines. Every day he went out on patrol, and every other day he had to practice with his railgun—shooting targets on the Moon was different than shooting them in sunny Florida—and after what felt like too-little sleep, he found himself on patrol again, bounding across another stretch of boring rock and boring dust.

What they were looking for, nobody would say.

Three platoons of American rank-and-file were stationed at the main barracks, along with a few dozen Kiwi engineers and hundreds of robots and AIs. The facility was little more than a few dirt-covered domes set on the crater's soft lip, plus machine shops and docking stations for the assorted jumpships. The city was to the north; to the south was the shadowy black depths of the Aitken Basin. Up on this high ground, the Sun was almost always visible, but it never climbed high and temperatures hovered around 230 Kelvin. Which was the ideal climate, if you had to live inside a perfect vacuum.

According to the Kiwis, the city would be finished in another 11 or 12 months. An enormous and extremely lightweight aerogel dome would have risen over the crater floor, protecting the colonists from the cold and vacuum as well as hard radiations. Power would come from solar farms straddling the crater's sunlit rim. Oxygen would be boiled from the simple rocks. And the colonists' precious water would have been lifted out of the Aitken Basin on a pipeline that someone had dubbed The River.

Colonel Lamb commanded the military presence. He was a young Marine—a career soldier from Annapolis—who looked even younger than his age. Lamb liked to smile and remind his men that this was a UN operation. They weren't building this community just for the United States or New Zealand, but for the entire world. Which was a silly thing to say, since Kracker hadn't helped build so much as an outhouse yet.

Why did an empty world and an unfinished city need three platoons of rank-and-file?

"Because these are our orders," was the sergeant's answer.

To every question.

"Someone believes that we're important," the big man claimed, not a taste of doubt in him. "But we're not important enough to know why. So let's just do our job, gentlemen. To the best of our ability. Then we'll walk on home again."

Their job meant riding the big jumpships out to nowhere places picked by generals sitting up at North Eye. Then their three squads would work their way across some barren mountainside or through the frigid, numbing cold of the Aitken Basin, searching for bootprints, or skid marks, or any artifact left behind by whoever. Their lieutenant claimed these were drills getting them ready for the day when colonists got lost in the wastelands. But of course they wouldn't be here when the colonists came. This was a three-month posting. What they were hunting were aliens; nothing could be more obvious. Everyone knew there were bridges other than those few knitting together the solar system. Maybe someone else was using them. Maybe. But what kinds of aliens they'd be, nobody could guess. And after six weeks without so much as an unexplained footprint, what began as a new world and a great adventure had descended into nothing but a dumbly routine chore.

One night, with Kracker dead on his feet and half-starving, the loud-est corporal palled him aside and ordered him down to the storehouse to find a new helmet. The company's mechanic had just found a microscopic flaw in their lieutenant's helmet, he explained, and they needed a replacement as soon as possible.

There wasn't any real hurry, of course; the corporal was just too lazy to do the job himself.

Kracker went to the storehouse and yanked a random helmet off one of the stockpiled lifestyles—helmets were a standard size, much like lieutenant's—then despite his exhaustion, he took a roundabout walk back to the lift. He always enjoyed strolling through the half-built city, using his suit's spotlights to show the way. He liked to watch the robots quarrying the stone and fitting each block into the growing buildings, while newer, smaller robots laid down optical cable and superconducting cable and water lines and sewer lines. Sometimes he tried to imagine the glass streets filled with walking, smiling people, and fruit trees growing from moonshad and human tanks, and maybe some pretty birds brought by shuttle from the Earth. Since birds couldn't use the bridges. And sometimes he tried to imagine himself living here. After he was finished with the Marines, of course. He pictured a good-sized apartment and a pretty girlfriend or two, and whenever he wanted, he would take a stroll to the old bunker and step back across the bridge, finding himself in Florida again.

Or maybe he'd pick a different place. Emigrating to Mars instead. Or one of Jupiter's beautiful moons, maybe.

Even when he was desperately tired, life seemed rich with possibilities. Boundless, and free, and Kracker couldn't wait to get on with it. As soon as he earned his out of the Corp, he decided, he was going to start making some giant decisions.

Glancing up, he spotted the orange lifesuit of an engineer.

Some of the New Zealanders were women. A few of them were almost pretty, particularly after six weeks without touching any woman. But as Kracker approached, he realized that it was a man. Colonel Jefferies. Which was too bad, but not awful. Kracker liked the

follow. Considering how little he knew about him.

Jefferies never came across as hardcore military. Like now. He gave the tiniest salute and said, "At ease," and in the same breath, he joked, "Does your bowl need a goldfish?"

The spare helmet, he meant.

Kracker laughed to be polite. It wasn't much of a joke. Then he looked past the engineer, watching as one of the old quarries was being filled with water. In this shadowy cold, the water would quickly freeze solid. But some of it would boil off into the vacuum first. To hoard every drop, a blanket of grayish aerogel lay on the surface, rising as the lake rose, expanding sideways as the surface area increased.

"How was your day, private?"

It wasn't an officer's question. Which was why Kracker was honest, telling him, "Pretty much boring, sir."

The man nodded, and grinned.

"Like always," Kracker added.

"That's good," Jefferies replied. Then he stared at the American, waiting a moment before adding, "Boredom is a good thing."

"I don't know," said the private. Then, "Sir."

Silence.

And because he was very tired and a little careless, Kracker asked, "Is it true, sir? Are we really up here to battle for aliens?"

The colonel looked at him for a moment, then turned toward his lake. He had a smart face—a professor's face. With a careful voice, he reminded the young man, "If there are aliens, and if they could open up a bridge and come here ... then they would have to become human. Bridges build what they know, and this is a human world. Isn't it?"

"Yes, sir."

"But of course," Jefferies offered, "a hard vacuum won't kill us instantly. Skin is a fair lifesuit, and all that. An alien, a brave soul, could step across and find himself in a human body, and he would have time enough for a quick gawk at his surroundings. Just to see what's here. Then a simple backstep, and he's home again. Safe." Then after a thoughtful pause, he added, "Unless our unfortunate explorer tripped over a rock, perhaps. Or if he stepped out onto the Aitken icefields, and that 40-Kelvin cold bit him ..."

Kracker heard a laugh, or something that sounded like a laugh.

"Maybe that's what your government hopes," said Jefferies. "An alien leaves his tracks, marking a useful bridge. Or even better, you find an alien down in the icefields, looking like a frozen human. Just like in a cryogenic tank, he received a fast freeze. Which means that you could thaw him out. And then, as your guest, you could interrogate him."

That image bothered Kracker. He wasn't interrogating anyone.

But there was another problem that had him bothered. And because this seemed like a good time, he asked, "But what if these aliens don't come out human? Sir? I mean, are we sure that we know all the rules of this game ...?"

Jefferies faced him, showing a wide strong smile.

Then he said what should have been obvious to Kracker.

"If that's true," Jefferies pointed out, "and if going from world to world is that easy, then you and I would probably be standing ass-deep in aliens."

"And wouldn't that be an unpleasant mess?"

HER FATHER TOLD HER GOOD-BYE AND PROMISED TO SEE HER SOON. Then he concluded by saying, "You're about to fall asleep."

"What's sleep?" Blue asked.

"This."

Nothing changed. Or had it? She felt as if she was the same, only she couldn't make herself speak and her mind began filling with nonsense—random thoughts colliding, then fusing, becoming weird little stories that bled into one another, threatening her with a comfortable warm madness.

Yet she wasn't scared.

Twice, then twice again, voices reached through Blue's dreams, asking, "What are you inside there? Describe yourself."

Four times, she heard her own voice telling the good lie.

She sounded far away, and relaxed, and very brave. But it wasn't

her voice, Blue reminded herself. And before she could think anything else, a great force suddenly washed her against the floor of her second, her poor body roaring in misery.
And still, Blue slept.

SOMETIMES HE DWELLED ON THE EASY TRONE. JEFFERIES HAD WALKED across a very long bridge, stepping out onto the driest imaginable world, and here, in this perfect desert, he had managed to build a river.

Lieutenant Nyugen was talking about the river, reminding everyone that they couldn't waste so much as a drop of the precious icefields. In particular, she was angry about a certain bucket-and-bowl robot that made a blunder last night, accidentally venting a small pond's worth of superheated water vapor. In the brutal cold of the Basin, most of the treasure had frozen out immediately. But the new ice was thin and scattered over old ground, and recovering it would take too long. Thousands of liters had been effectively lost. And because she was an intense person, and smart along narrow lines, she had to remind everyone what they already knew: For the next 20 or 30 years, the Moon's southern hemisphere had no other source for its drinking water and its irrigation needs and people's every-other-week baths.

Lieutenant Barker had to interrupt, pointing out, "Twenty years is a guess. That's when the Callisto ices are promised. But frankly, what's more likely is that we'll build a huge milldam in the Pacific, and we'll lift up seawater inside giant heat-shielded bullets, dropping them wherever the moon needs a good rain."

With Barker, it was hard to see the difference between the jokes and the honest speculations.

Either way, Nyugen wasn't happy.

"We have to be more careful," she kept reminding them. "It took billions of years to collect this little bit of ice, and we can't afford to waste a drop."

To ease tensions, Jefferies said, "Agreed," to no one in particular.

Then he stared at each of their faces. European. Maori. Vietnamese, and African, and the rest. "This wasn't a critical loss," he told them, "but worse things could happen. The River's pipeline ruptures up here, and thousands of liters would vanish." The Americans used to waste millions of liters making rocket fuel from the precious stuff. Which was why he concluded by reminding them, "We aren't wasteful like our allies. And we aren't careless, either. Which, I think, is all I need to say on this subject."

A thoughtful silence descended.

"Continue your report," he told Nyugen.

She nodded, then punched up the latest surveys of the icefield. Limited to the permanently shadowed depths of the Aitken Basin, the ice was far from a simple thing. The Moon's own rock was devoid of volatiles—a consequence of being born from the Earth's superheated mantle. Impacting comets and wet asteroids had brought the treasure. Sometimes a distant impact had delivered a whiff of vapor to the perpetual cold. On rare occasions, whole comets had fallen near the south pole, and mixed with their ices were hydrocarbon tars that might soon become soil, and clothes, and anything else deemed vital to the new city.

"It seems that the deeper we dig," Nyugen announced, "the more complicated it all becomes."

Like everything else in the universe, thought Jefferies.

She looked at her colonel, smiling in a faintly apologetic way. Both of them knew that other superiors wouldn't give her as much latitude as Jefferies allowed.

Gratefully, their briefing was nearly finished now.

Jefferies closed by aiming his staff at problem areas, trying to anticipate the day's challenges. Since robots did the grunt work, software and middlemen AIs were the usual concern. When things finally seemed finished, he said, "Thank you, people," and rose, intending to dismiss everyone.

As everyone stood, Colonel Lamb stepped into the galley.

He was holding a notebook in one hand, staring at its monitor. Abruptly looking up, he asked, "Who ordered a savant-grade AI?"

You find an alien down in the ice-fields, looking like a frozen human.

Jefferies barely knew the man. They'd shared the barracks from the beginning, and they met every day. But each man was consumed by his own job, and they'd never discovered anything resembling a common interest. Lamb was a soldier for a nation that still fought wars, and Jefferies was an engineer who happened to have an officer's rank, in an army that couldn't remember the last shot that it fired in anger.

Quietly, Jefferies admitted, "I put in an order last week."

"Well, your AI's almost here," Lamb told him. He looked up, smiling with that little-boy face that some of the female engineers, and one or two of the men, found beautiful. "Launched by the Russians' new gun ..."

"That's fast," said Jefferies. "I didn't expect it until next month."

"Well, you don't have it yet," said Lamb, betraying his anger. "There was a malfunction. It's landing in the Schrodinger Crater, nearly six hundred kilometers from here."

Jefferies pulled up the mission-status file. The AI was built and educated in Singapore, under UN contract, and a retro-malfunction was to blame.

Jefferies told him, "Thank you. I'll send someone to retrieve it."

"No need," the American replied. The pretty face smiled grudgingly, and he explained, "One of my patrols is already heading in that direction. And it would seem like such a waste not to send them on this errand. What do you think, Colonel?"

AND THEN, SHE WAS AWAKE.

There was a rushing roar of gases, and for the first time in her brief life, a piercing white light fell on her. That's when Blue discovered her eyes. Her father had promised eyes, and here they were. Astonished, and thrilled, she stared at legs and arms that she already knew by touch. Then the amniotic fluids had boiled away, and on her long legs, she stepped through the narrow opening, excitement joined with a delicious fear.

"What do I do now?" she asked herself.

In her mind, she heard her father's sturdy voice telling her, "Now you run, Blue. You know where, and as fast as you can..."

HERE WAS ONE OF THE LARGEST HOLES IN THE SOLAR SYSTEM.

That's what Kracker kept hearing. More than four billion years ago, a vast something had crashed into the newborn Moon, vaporizing its crust and exposing the iron-rich mantle beneath. The Aiken Basin was 2,500 kilometers across, 12 kilometers deep, and extending from the south pole into farside, it had managed to remain unnoticed and unappreciated until the tail end of the last century.

But even when you knew all that—when you were flying above the Basin in a jumpship, knowing what you were seeing—what lay below you had been worked and reworked by so many impacting asteroids that it looked exactly like every other corner of this dreary world.

"Gentlemen," the sergeant called out, standing before them in his black-and-crystal lifeshit. "I need two volunteers to retrieve our lost AI. And do it quickly, please."

This would be an easy duty, and a distraction. Kracker lifted a hand, saying, "Sir?"

"Fine," the man purred. "And Wallace, too."

Five minutes later, they set down on a dusty stretch of flatness. Always in their suits, the two men stepped to the door and retrieved their railguns from the rack, loading clips of iron and uranium ammo—the standard rounds—and the door fell open without a sound, revealing a rock-strewn plain lit by a fierce, horizon-hugging Sun.

The AI and its little bullet ship had set down inside the nearest shadow.

Because it was habit, Kracker watched the dust, each of his long steps kicking up what hadn't been disturbed for aeons. Sometimes he imagined that in a thousand years, when the Moon was sprinkled with domed cities and parks, some of his footprints would have survived. Maybe tucked inside fancy, impenetrable bubbles that would maintain the perfect vacuum. And he pictured a neat, official sign reading:

Here Walked Somebody. We Don't Know Who.

Quietly, he laughed at the image.

Wallace said, "Got it," and plunged into the cold black shadow of a boulder pile. Kracker fully intended to follow, but the habitual glance found something, his eyes staring at a long low streak of shadow that didn't resemble its neighbors, or natural, looking unlike anything that he would have expected to see here.

"Where are you, Kracker?" asked Wallace.

"Wait there," he told his partner.

Then with a soft careful voice, Kracker asked, "Do you see anything funny?"

"Funny-how?"

"Funny-wrong." Because that's what this was, Kracker's suit bent at the joints, letting him kneel, and with his shoulder lamp, he washed away that sharp little pool of blackness, revealing what looked like a single long footprint.

A bare footprint, of all things.

"Sergeant?" he groaned. Then he set down his weapon and plucked his camera from his belt, asking, "Can you see this, Sergeant?"

"I don't see anything here," Wallace complained.

"Hold your positions," their lieutenant blurted. "Hold them!"

"What do you make of this—?" Kracker started to ask.

Then Wallace cried out, "Still! This bullet's empty!"

The footprint, or whatever it was, had two very long toes. What did it look like? An ostrich foot, thought Kracker. He'd seen the giant birds pacing in feedlots, and he remembered enough to find similarities. But there were differences, too. The toes were too wide, for instance. Grossly oversized, and by the looks of it, they had dug into the dust as the creature took a long, long stride.

"This bullet's standing empty," Wallace repeated. "Some son-of-a-bitch stole our AI!"

Kracker stood up, prompting the sergeant to say, "No you don't, son. We're waiting for Colonel Lamb. Let's give him a look, too."

Whatever this creature was, Kracker was thinking, it didn't just step out onto the Moon, then jump back home again.

"Private Leeves?"

But he couldn't help himself. He took several careful steps before he found the next footprint. Like the first, it had two fat toes and a high arch, and when the toes had gripped the dust, they'd bit deep, giving the creature ample purchase for its next leap.

The left foot, this had been.

Again he knelt, setting down his gun, aiming with his camera and lamp. Not that many years ago, when he was still a kid, Kracker used a computer game to teach himself how to track wild animals. His first impression was that the prints were very fresh. But of course this was the Moon, no weather here but the changing temperatures, and it was possible that these odd marks were older than the human species.

Could be.

"What about our AI?" Wallace kept asking.

Nobody answered him.

Kracker looked at the sky, judging directions by using landmarks on the everted Moon. When he felt certain, he said, "It was running, sirs. Whatever it was." And he stood again, telling his invisible audience, "By the looks of it, I'd say, she's heading due south."

HE FOUND LAMB SITTING ALONE IN THEIR TINY COIN-CENTER. THE American had called him, warning him with a mildly pissed-off tone that something had happened on Schrödinger and it might be important. Jefferies had been dressing for a trip to the icefields. He was still wearing his bulky underwear, and he stood behind and to one side of Lamb, both watching images coming from a dozen cameras, and listening as the platoon's lieutenant dispensed useless little guesses about what they were seeing.

"This could just be a coincidence," the lieutenant offered. "These tracks are a million years old, and the AI was never onboard."

A huge, preposterous coincidence, thought Jefferies.

But then Lamb muttered aloud, "Maybe so, lieutenant. Maybe so." Lamb wanted very much to believe the preposterous. Not for the first time, Jefferies noticed that his colleague had the clear bright eyes of someone who, regardless of the circumstances, never quite understood what he was seeing.

To the lieutenant and the platoon, Lamb said, "Retrieve that bullet first. And bring it back here for study."

"Yes, sir," the lieutenant replied, grateful for orders. "Is North Eye watching?" asked Jefferies. Standard procedure was for at least one of the giant telescopes to monitor every incoming object, usually from the first moment when it passed into event space.

"They tracked our bullet until it was down," Lamb punched up old data, then with a nervous smile added, "Actually, most of our mirrors are offline. For maintenance, for routine software modifications. It's been planned for days." And he paused, using a delicate finger to push a fuzz-speaker deeper into his ear. He was listening to something bothersome, his free hand requesting fresh data. "There's just one mirror available. And it's trying to watch another two misplaced bullets." And again he paused, taking a little breath before concluding, "It's been a bad day for our supply system."

A lousy day. One of the bullets had crashed near the equator, on Neaside. It was only carrying a new AI. While the final bullet, loaded with industrial-pure diamonds, had vanished into one of the shadowed craters near the north pole.

Each bullet had been launched by a different railgun. Each cargo had passed through rigorous, well-tested security checks.

Jefferies couldn't find any reason to worry. Yet he worried anyway. He watched as their jumpship changed positions, settling down next to the empty bullet. Big lamps and little ones pushed away the shadows. The lieutenant stepped into the bullet's blown hatch, remarking to nobody in particular, "Maybe we've got a stowaway. A thrillseeker who slipped past security, somehow..."

A thrillseeker who survived the acceleration of a railgun? Even delicate AIs were launched at a crashing velocity.

Quietly, Jefferies said, "I don't think we should be doing this."

Lamb didn't hear him. Instead, he made a soft, anguished sound and closed his blue bright eyes, rubbing them with his little fists. Then he opened his eyes and hands again, looking at Jefferies, motioning to the nearest screen as he asked with a mixture of curiosity and disbelief, "What do you make of this, Simon? As an engineer, I mean."

Lamb was watching the northern crash site. The images were a 10th of a second old, and silent, and they showed almost nothing. The crater was deep and young, and because of its proximity to North Eye, its everted image hung just above the horizon, most of its dark floor hidden. But a dim heat source suddenly showed in the infrared. A human being wearing a heated life suit would make a brighter mark, Jefferies knew. Then he did a rough estimate of the object's speed. Twenty kilometers an hour. Or 30. But their target was climbing the crater wall, the terrain steep and covered with boulders... rugged going for the strongest, most graceful, human gymnast...

A fierce white smear erased the moon. For a few moments, rockets were firing, their fantastic heat melting fossil ice as a North Eye jumpship dropped in on the crash site.

Again, Lamb shoved the speaker deep into his ear. Then he quietly

announced, "Their bullet's empty, too."

Jefferies continued watching the little heat source. And he wasn't the only one. A second mirror was suddenly brought back online, and together, both mirrors focused on it, enhancing the image until it was a distinct point. Whatever the object was, it was bounding uphill like a low-gravity mountain goat. And then a last leap carried it to the rim's summit, and sunlight, and for a strange little moment, Jefferies saw a figure with a vaguely human shape—the creature bounding into view, then hesitating, seemingly taking in the view before leaping back into the shadows.

Only this time, there was no heat trace. And there should have been, he told himself, deeply puzzled. On the main screen, the sergeant was giving orders, soldiers and smart-ropes getting ready to move the empty bullet.

"We have excellent security systems," said Lamb, speaking to himself as much as anyone. "Nothing comes to the Moon uninvited."

Jefferies gave him a good stare. Lamb blinked, his resolve wavering.

Then with a quiet intense and intentionally angry voice, Jefferies said, "Leave the bullet there. Leave it. Your men need to be looking for this stowaway. Now. This minute."

Shoulders squared themselves. Then with the faint beginnings of a sneer, Lamb asked, "Is that what you think?"

"And that's what you're thinking, too. Isn't it?" Lamb said nothing.

Then Jefferies leaned close to that sneering face, waiting for the bright eyes to blink. And that's when he said with a furious whisper, "Now. You're going to tell me everything you know. Every rumor that you've ever heard. And most of all, I want to know every wild story that you've dismissed because it seemed just too damn strange..."

NO MATTER HOW FAST SHE RAN, THE HORIZON CAME NO CLOSER. Because that's how it was to run on a round world, her father had taught her, preparing her for this day. And the world was visible above because it had asked its old sky to change. Small and dead, the world looked. But beautiful in ways that she hadn't anticipated. The blasted rocks and small craters and even the cloaking soft dust seemed peaceful, and lovely, and the unexpected hints of red and amber within the grayness were simply gorgeous. A dead world can be lovely, she realized. And knowing what would happen, she felt just a little bit sad.

And still, she ran straight south. Obeying her father and the voices in his own thick bloods, she kept flinging herself with one leg, then the other. Save for the pleasant soft thump of toes biting into the old dusts, a perfect silence held sway.

And then, a voice. "Blue," she heard. "Look to your right, sweetness."

For the first time since her birth, Blue stopped running, surprise and joy joined with an instinctive caution. In a radio whisper, she asked, "Where are you?"

"Here." At the base of a long slope stood a cubic boulder anchoring a long shadow, and from that shadow stepped a solitary figure. Like Blue, she was shaped. But she looked tiny and a little frail, the hot sunlight threatening to wash her away entirely.

For the first time, Blue changed direction. Gradually the boulder became tall and vast. And still, it was a long ways off.

"Your father sent me," the voice promised. He had told her to expect a woman, yes. "Are you hungry?"

No, she thought. But then she noticed an emptiness and the beginnings of weakness, and she whispered, "A little bit hungry."

"Then come here, child. Come." The boulder rose up like a mountain now, and the woman was taller than Blue could have guessed. Kneeling, she still looked over the child, her full-grown body wonderfully strong, each thick finger tipped with a long bright nail that was sharp enough to tear flesh. But she was careful with Blue. She was gentle. With a gentle soft voice, she said, "Everything is going wonderfully well."

Blue was thankful.

"Now open your mouth, sweetness."

Mouths were only for eating. Blue's little mouth opened briefly, then it was filled with a glossy nipple. Instantly, a rich clean current flowed into her, charging her bloods and her hearts again.

For several minutes, she lay in the woman's kind hands, nursing.

Then she was full, and said so, and she spat out the nipple and stepped away, noticing the others who were standing inside the boulder's long shadow. Dozens and hundreds of others. Fullgrown, and vast. And as she watched, more strangers appeared, emerging from some dark place at the base of the great boulder.

"Hello," Blue whispered to them.

And in a quiet rumble, they said to her, "Hello."

"WE'VE ALWAYS HAD HELP," LAMB ADMITTED. "OUR EXPERTS KNEW there could be bridges, but someone told us how to open them. And someone showed us which bridges led to the Moon, and Mars, and all that."

"By someone," Jefferies prompted, "do you mean aliens?"

"They look utterly human," the American blurted.

"But they came from other worlds ... Is that right ...?"

Lamb took a deep breath, then stared at the nearest monitor. Apparently new orders were being issued. Their security AI was translating them and putting them up on the screen. With a nearly casual tone, he remarked, "You're right, it seems. We're supposed to hunt for the stow-away. Immediately." Then he winced, adding, "We've also been ordered to make ready for reinforcements. A thousand of them, nearly."

All those stockpiled lifesuits and weapons sitting inside that armored bunker. Waiting for this moment, Jefferies realized.

Lamb contacted his lieutenant, giving him new instructions. Then he looked at Jefferies, saying, "Officially, I'm here to supply a presence, and prepare for colonization. If disaster comes—and nobody seems to have told me what disaster to expect—I'm supposed to be replaced by more experienced hands. Which has always been a comforting thought. You know what I mean?" He sighed as if embar-

The man gave the smallest of nods, saying, "It's complicated, the situation is. But from what I understand, yes. The Family has helped us, and they're still helping us." Then with a winsome smile, he added, "My friend ... well, she claimed to know a few of the Family, and they're an amiable bunch of odd ducks ..."

Which left one obvious, blazing question:

"So what are we scared of?" Jefferies blurted out.

But Lamb didn't answer immediately. Instead, he stared at the largest monitor, watching the lumpy gray and black moonscape flow beneath the quick jumpship. Then his gaze lifted, and with a brittle sense of worry, he admitted, "My friend ... when she learned that I was going to be stationed up here ... she gave me a look, then warned me, 'If there's one Family, darling, then why can't there be two ...?'"

SUDDENLY, THE SHIP WAS FALLING.

No one mentioned their changing course. No one spoke at all. Even the sergeant wore an expression of sturdy, disciplined concern. When new orders came—encoded, and swift—the sergeant tilted his head as he listened, his mouth invisible beneath his thick brown mustache and his great green eyes suddenly wider. Then the ship started its landing burn, and the sergeant managed to stand against the gees, calmly telling his men, "We have a possible hot zone. Our own sensors detected motion below. Squads A and C will make an armed reconnaissance. B remains at the ship, with me. We want to set up a quick perimeter. Understood?"

Someone called out, "So what's out there, sir?"

The lieutenant emerged from the cockpit, shouting, "Nothing, according to North Eye. The place looks clean now."

Clean of what? thought Kracker.

But nobody asked the obvious question, and nobody let anything more than a little nervousness creep into their faces. The ship hovered for a last little moment, then settled. The rear and side hatches sprang open, and with the lieutenant repeating his orders, two squads leaped down onto the bright, flat, empty plain.

Self-replicating robots have been launched.

rassed, then continued. "But unofficially ... unofficially, I once met a woman who claimed to have worked on a secret project. My government's project. She was hired to cross bridges, visiting alien worlds ... she told me this ... those bridges would place her soul inside the strangest alien bodies ..."

"Have you ever heard anything more incredible?"

"You never have," Jefferies offered.

Lamb shrugged. "At the time, I assumed that she was just weaving a story, trying to impress me." A shy smile flickered. "She claimed that most of us don't adapt to these alien worlds. Even if our bodies are remade, our souls can't withstand the change. Most of us rapidly go mad."

"What else did she tell you?" Jefferies pressed.

"On every world, there's a few souls who don't mind changing bodies. Changing species. They can go wherever they want, and thrive." Jefferies waited to feel surprise, but surprise didn't come.

"And that's what they do," Lamb continued. "These souls open bridges and cross over to other worlds, finding souls like themselves. And they make families—they call themselves the Family, she claimed—and their children inevitably walk on to the next odd worlds."

"And they've helped us ... this Family has ...?"

The lieutenant interrupted, announcing that his jumpship had lifted off and was chasing their quarry, as ordered.

"Thank you," said Lamb. "Out."

Again, Jefferies asked, "Did the Family help us?"

They should have kicked up a small dust storm.

But the ground was concrete, practically. Packed smooth save for the occasional little boulder. Kracker's first guess was that a big shuttle must have touched down here. Fission rockers could have swept away the powdery surface, leaving this floor-like surface behind. But then he noticed how the dust lingered on top of the boulders, like frosting. Then with a second and third look at things, he noticed faint marks that might be footprints on top of footprints. A toe gripped here, and there. And from those toe marks, he could tell they were the familiar ostrich prints, only larger. Only huge. And there were so many of them that they'd simply beaten the Moon smooth.

The lieutenant was behind him, panning a camera over the scene as he spoke on another channel. Talking to Lamb, probably. And the far-off generals. And maybe the Earth, too.

Kracker's squad formed a line, then moved west. The little plain was interrupted by an old, smooth-edged crater. Bringing up the scan data from his ship and from North Eye, Kracker found a thousand reasons to believe that the crater was cold and empty. With the rest of C squad, he attacked the slope, and with the lieutenant still behind them, chattering with distant voices, they reached the rim and dropped to their bellies and carefully peered down into the crater's shadowy bowl.

With night vision engaged, Kracker could see nothing but dust and rubble. His suit's sensors found nothing but the usual iron-rich rock and traces of water. His suit's computers checked the exact alignment of

the rubble against precise radar maps. Nothing seemed out of place. Nothing. And after a long minute of routine caution, the corporal in charge ordered his squad to stand up again, telling them to follow him into the crater.

Kracker hesitated.

It would be cold down there. Brutally, painfully cold. He took a couple of minutes to double-check his suit heaters. Just to be sure. Then someone below him said, "Would you look?" with an odd voice. And by the time Kracker had lifted his eyes, the crater floor was moving. Churning and splitting, and rising. Sharp boulders lifted themselves on hidden legs, and they grew sudden long arms that shook off blankets of choking dust, and in the next instant, they began to run—thousands upon thousands of rock-colored bodies sprinting straight toward a dozen startled young men.

THE AND THE WOMAN RAN TOGETHER FOR A LITTLE WHILE.

They didn't speak. Not until they stopped in the shadow behind a little mountain did they share so much as a whisper. It was pleasantly cold in the shadow. Blue felt her blanket-fats changing their chemistry, holding in her precious heat. Then the woman offered her second nipple, and clasping Blue's head, she said, "I have to leave you now."

Blue said, "No." Then she spat out the nipple, and remembering her duty, she muttered, "I mean, all right."

"It will be. Everything will be perfect." The great gray face smiled. Her feeding mouth and wide black eyes looked happy and proud, and a smiling voice told her, "Move against the Sun now. Do you understand me?"

Perfectly, yes.

"No farther south than here," the woman explained. "You're too small and much too young to take part in certain things."

"But I want to help," Blue complained.

She wanted to watch, in truth.

"Circle to the east," said the woman. "That's helping."

The girl showed her own bright smile, then finished her nursing. When there was nothing left to pull from the nipple, she asked, "Are you hungry now?"

"Famished," the woman admitted. "But there's a meal waiting for me over there."

There was nothing to see. But Blue understood. She nodded and asked, "Would I like this other world?"

"Not as much as this world," the woman promised.

Probably not.

Then the woman turned and weakly shuffled toward the deepest shadows. With a final glance back at Blue, she opened her eating hole, and a flood of boiling fluid exploded into the vacuum. Then she stepped again, and vanished, and the fluids froze as a quick snow that fell straight down and left the dust glistening white in the world's skin.

SOMEONE—THE CORPORAL, BY THE SOUND OF HIS SHARP VOICE—HAD the balls or the simpleheaded stupidity to yell, "Stop! Fight where you are, stop!"

As if the aliens, or whatever they were, could hear him.

Much less understand him.

But then there was a radio sound, sudden and vast, and deep. It slid past their channel, dissolving for an instant before it slid back and stuck. Stuck, and grew louder. Thousands of powerful voices made a deafening roar, chanting or singing together, a solid steady beat making Kracker's heart race.

He couldn't hear the corporal, or anyone.

With a punch-command, he shifted to battle transmissions, his voice dancing across billions of channels to escape the jamming. "Lieutenant!" he cried out. "Can you see this? Can anyone? What do we do...!?"

The corporal and the rest of C squad scrambled their signals, a dozen wild voices asking for orders. Directions. Enlightenment.

"Ready fire!" the corporal screamed. "Warning fire, only!"

The creatures had already reached the crater wall. Huge and astonishingly quick, they leaped from boulder to boulder as they came up the steep slope. Even as Kracker activated his railgun, letting it acquire targets, he was enthralled. Tall as a house, these things were. Built from native stone and dust, it seemed. There were dome-shaped heads and oval black seams where eyes should be, and their bodies were thick and the thick legs were long, something of a kangaroo in their bounding, but only one foot slapping the ground at a time.

"Warning fire! Now!"

The railguns made no sound. Fingers of iron-dressed uranium were flung at near-meteoritic velocities, targets selected by computer and the magnetic pulses in the barrels placed the slugs within millimeters of their targets. There was no sound and no flash, and the slugs moved too fast to be visible. But there was a frantic, boiling motion as native rock was split and pulverized, a dense black wall of ionized dust rising between soldiers and aliens.

And the horde kept coming at them.

Kracker's gun began panning downwards, aiming for closer ground. Then he heard his corporal calling out, "Wounding fire—!"

Good. Finally.

He told his gun, and his gun stopped firing. Radar and laser pulses were having trouble separating legs from bodies. It was the crater of dust, partly. But mostly it was the targets themselves. Watching the data projected inside his helmet, Kracker saw an avalanche rushing up at him. That's what the aliens were to the software. Iron-fist rock. Nothing in their experience matched these creatures, or these ugly circumstances. And Kracker could do nothing but stand on the crater's rim, watching his long barrel swirl and twist, desperately trying to find something to aim at.

Now the lieutenant's voice found them. Finally.

"Report, C squad—!"

He was interrupted by a wild, anguished scream.

That was the corporal, Kracker realized suddenly. The poor shit—!

"Report!"

The lieutenant was waiting for a dead man to answer. Someone else had to talk now. Had to give orders. And that's why Kracker found the void and stomach to call to the rest of his squad, telling them, "Killing fire! Now!"

Railguns launched thousands of slugs in those next moments.

Kracker and his weapon raked the slope with a withering fire, aiming for thick broad chests and the squat big-eyed heads. At first, he only saw more dust boiling up into the stark white sunshine. Then a single figure emerged, long arms reaching, tipped with surprisingly human hands, each finger sporting a long, knife-like nail.

"Manual," he told his gun.

Then he aimed at the eyes and put a quick dozen into the head, splitting it open even as the monster took another leaping stride...and blind now, its long two-toed foot hit dirt and gripped by feel, and somehow it leaped again, ignoring the blows as Kracker panned down its long body.

It was dead, he prayed.

But even as gravity slowly pulled the monster down, another three appeared in its tracks. Kracker hit them in the chest. He downed them faster, this time. But now there were a dozen giant figures leaping uphill, charging him, and he shouted, "Lieutenant!" and then, "We're under attack! Orders!"

Someone asked, "What in hell are they—?"

Another voice screamed in agony, "No, no... please...!"

Kracker fired, and fired. The stomach was best, he realized. Was weakest. Punch holes in what should be the belly, and the guts and juices and gases boiled out into the vacuum, and the monster tipped and staggered, and dropped, its softest, weakest center exploding outward, trying to fill the empty universe.

"Hold your ground!" someone shouted.

The lieutenant did.

Fuck that, thought Kracker. Then with all the authority he could muster, he shouted, "C squad! Back to the jumpship!"

A sloppy row of monsters ran across the backs of their dead.

Kracker fired, fled two steps, then paused and fired while shouting, "Retreat!" He fired in support of the men who were supposed to be on his flanks. Who he couldn't see anymore. He aimed and fired, and fired, and then his gun warned him with a red light, and a loud voice, telling him, "Ammunition is critical."

A soldier appeared below. Head down, gun lost. He was working his way up the rugged slope, his desperate breathing audible on the radio ... and from somewhere below, a head-sized chunk of rock struck him on the back, its simple momentum knocking him off his frantic feet, leaving him laying there, stunned.

It was Wallace, Kracker realized.

He fired until the gun said, "Empty," and he yelled at Wallace by name, and watched as the man picked himself up and ran again, hands scrambling to help his feet, grabbing the top of a half-buried boulder and that big dark ugly face showing now, contorted by exertion. Then a giant hand took him from behind, grabbing his lifebelt by its pack and lifting him from the ground, and the other hand calmly grasped one of the kicking legs, jerking once, then harder, the suit and its precious leg ripping at the knee.

Wallace screamed, and screamed, fists beating furiously against his own crystal helmet. Then with a strange dreamy mix of viciousness and ceremony, the monster lifted the human high overhead, twirling him, letting the stump bleed out into the vacuum ... a thin hint of boiling blood trailing like a comet's tail ...

"HOLD YOUR GROUND," LAMB ORDERED.

Repeating what the generals were telling him.

To himself and his lieutenant, he said, "Give C squad supporting fire. But stay there. Whatever these creatures are, they don't have weapons. And they've got to come across open ground."

"No!" Jefferies blurted.

A pair of wide blue eyes glanced at him. Lamb's first instinct was to reprimand him for speaking out of turn. But he didn't waste time, shaking his head disapprovingly as he explained, "Our battle AIs up at North Eye have already run a thousand simulations. Lieutenant. Our tacticians have counted your enemy, and they've studied his capacities, and we certainly know your abilities and firepower ... and you will not lose this engagement. Trust me on that, Lieutenant!"

"Understood, Sir?"

Jefferies reached out and abruptly killed Lamb's microphone.

"What do you mean—?" Lamb snapped.

"A question," said Jefferies, trying for a lucid, reasonable voice. "When did you become a colonel? The exact date."

Lamb inhaled, hesitated. Then he answered reluctantly.

"My promotion came three months before yours," Jefferies told him. "UN regulations give me command, should I wish—"

"Except I'm taking my orders from North Eye," Lamb replied, his voice smug. And brittle. And a little lost.

"That's your option. If and when you happen to be in command." He said it calmly, letting the man see that he didn't relish any of this. "But you aren't in command. I am. And until this ceases to be a UN operation, I intend to give orders here."

There was a long, cold silence.

Then Lamb activated the microphone and removed the fuzz-speaker from his ear, a weary mix of anger and resignation in the voice as he said, "Fine. But I intend to lodge an immediate complaint—"

"Lieutenant!" Jefferies called out.

"Who's this? Colonel Jefferies—?"

"You've got to get out of there. Now. Do you hear me?"

Confused, barely audible sounds answered him.

"Explain it to the man," Jefferies told Lamb.

And with a calm chill, Lamb said, "Our ally is within his rights, it seems. I expect you to do as he wishes."

Jefferies said, "Lieutenant. These things are coming across a bridge—"

"I know that," the lieutenant snapped.

"And you could have landed on that bridge!" He said it, then waited for the meaning to seep home. Then, "Speaking as a lowly engineer, let me tell you something—I never believe in fancy simulations based on anyone's half-knowledge and misguided hopefulness."

A brief pause.

Then the distant voice said, "All right, sir. What do you want me to do?"

"Save every last man under your command. However you can. Then get your ass back here ... immediately ...!"

"Yes, sir," the lieutenant replied. A grudgingly thankful lift to his voice.

Lamb was staring at him, waiting to be ordered out of his chair. But Jefferies didn't want the chair, or much else. His only intention was to hold things together until reinforcements arrived and he was relieved of command. He was thinking about what he would do next, and after that, and what the enemy might do in response ... and it was Lamb who glanced at the monitors, noticing something, his startled voice muttering, "Jesus, look ..."

A lone figure stood on the dusty plain. The creature had just stepped into existence, its head turning like an owl's head, looking behind itself and spotting the jumpship ... and some kind of mouth opened beneath the glossy black eyes, a pressurized vomit thrown toward the sky even as the creature took a graceful step backward, vanishing again.

"Lieutenant?" said Jefferies. "Target that ground!"

But nothing happened, and Jefferies wondered if they wouldn't come across the bridge. Maybe, despite all evidence, these creatures didn't relish casualties. Yet just as he started to hope, a streaking figure appeared, and 20 more, each leaping from the same invisible point, sprinting in every possible direction.

The ship's railguns cut them apart.

But then they came on faster. Thicker. Jefferies remembered when he was a boy, and bored, and he poured boiling water into an ants' nest. That's how those big stone-colored creatures looked to him. Like a geyser of scrambling, desperate bodies. A force of nature. Too many to count, and far too many to kill.

The sergeant barked out orders to close hatches and prepare for launch.

With its hatches still closing, the ship lifted up and swung around, then skinned low over the foot-mashed plain.

The crater lay in the opposite direction. Three men in lifesuits were leaping down its sun-washed wall, and there was nobody else. Three survivors out of a dozen, with maybe a thousand aliens in close pursuit. But the ship's guns raked the higher slopes, and smart-lines were dangled, the ship hovering now, the lines neatly snaring each soldier.

The obvious suddenly struck Jefferies.

Bending over Lamb, he asked, "How much more weight can your ship carry?"

"Why?" Lamb had to ask.

"Of course we don't know their density, or total mass," Jefferies said, thinking aloud. "I guess we'll just try it. And if we can't, we can't."

He called the lieutenant, saying, "Drop more lines. We need a good close look at one of these things. Find an intact body, and snare it ... and if you can wrestle it off the ground, bring it home ..."

"Understood," the officer replied.

Then his sergeant roared, "Sirs? Would you look at this!"

The plain had vanished, nearly. Huge gray aliens were rushing not from one bridge, or two, but from three distinct bridges. Jefferies made his count again, feeling a numbing awe. Three bridges; gateways to three distinct worlds, presumably. He looked at Lamb, and Lamb stared up at him with a cold, colorless face. It was as if the universe were pouring itself out onto that little piece of the Moon.

RUNNING, SHE PASSED THE OCCASIONAL SOMEONE.

A long shadow would whisper, "Blue," or someone would suddenly step into this world, his shadow, or hers, dipping across the dry, old dust. Maybe a hand would be lifted. A gesture of recognition, of thanks. But little was said. Silence was still important. For her. For here. For this little while.

Money of the strangers opened their mouths, disgorging their precious fluids before stepping back again, vanishing again.

Others ran off in their own important direction.

South, oftentimes.

Bad north seas on important direction, too.

For a long while, blue counted the strangers. But as time passed, there were too many. Sometimes 10 or 20 of them would step onto this world together, all raising their strong hands, praising the girl even though they were the ones doing the truly important.

Months opened.

Beliefs emptied.

It was as if the universe were pouring itself out onto that little piece of the Moon.

Then back they stepped. Back home to places that she would never see, and lives always great and beautiful.

KRACKER'S SQUAD WAS DEAD. ALL OF THEM FRIENDS, OR AT LEAST MEN that he'd known better than anyone else in his life. Their faces dead. Their voices dead. And their bodies left behind on a patch of ground which he couldn't even name.

Their sergeant said, "You and the other two can stay in camp. Talk to the chaplain, if you want."

But the chaplain was an AI. A machine trained to listen and spoon sympathy, and when necessary, talk as if God was his personal friend. The sergeant meant to be nice and decent, but Kracker had to tell him, "No way, sir. Sorry, sir. We want to help. If these bastards reach us, we want us as ready as can be."

The other survivors nodded, agreeing with Kracker.

"All right." The sergeant showed them a smile, then waved at the rest of his platoon. "Leave that carcass where it is. The engineers want their looks and pokes."

Colonel Jefferies and a few other engineers were standing next to the body, assembling sensors designed to look inside solid rock. Besides them and Kracker's platoon, there was nobody in sight. The other platoons were setting up firing positions where the River's pipeline rose up from the icefields. And the other engineers were laying mines. And putting together a few other surprises. But of course there was help coming. Just as soon as the soldiers could be assembled in Florida, then briefed, they'd be sent up here. That's what Kracker was going to help with. What was left of his platoon was going to make ready for a thousand reinforcements. With all those stockpiled weapons, they'd make a force wielding more firepower than all the old empires of Europe combined.

Good, he thought. Good.

The ride down to the new city was quick and silent. Nobody felt like talking. Everyone checked and rechecked their weapons, and their recycle systems, and Kracker hid back and looked up at North Eye, recognizing the smudge of mirrors just a little ways right of the pole. Someone had mentioned that a second bullet crashed up there. Real close to the old observatory. If he was an alien general, that's what he would attack first. North Eye was the military headquarters. But because of that, it had more soldiers to begin with. And munitions for five thousand troops. Which made him smile, just a little bit. He was thinking about the coming slaughter. Telling himself that maybe they were aliens, but that didn't mean that they knew shit...

The railcar delivered them to the station, and in a body, they hurried up the long, empty boulevard, past a dozen long stone buildings, the last of the structures covered with hard-working robots. The robots were tearing down every wall, quickly and violently erasing every obstruction from the field of fire. Someone had decided. If things got real

ugly, this was going to be their last stand. The bunker was. But things wouldn't get that bad, Kracker kept thinking. Kept promising himself.

Inside the bunker, a thousand suits waited.

Diagnostics needed to be run on each one. Every suit that was up and running made things easier for those who were coming.

"How soon?" someone asked.

The sergeant preferred not to hear the question. He closed the airlock and cracked his helmet, then gestured with one arm, telling his platoon, "Pick a row, each of you. Then work it. One at a time, and quick, and right."

The bunker had never looked spookier. Kracker looked at an endless

row of empty lifelines dangling from their cradles, helmets cupped in their gloves, and he couldn't help but think of dead men holding their severed heads.

That's the image that kept coming back to him.

Dead men in a posture of ultimate surrender.

But that won't be me, he was thinking. Even if they lost this battle somehow... hell, the bridge and the Earth were just a few lazy steps away...

A PURPOSEFUL CHAOS HELD SWAY.

When Jefferies wasn't giving orders to his people, he was watching Lamb and his soldiers making ready. And when he wasn't doing either, he'd skim over the latest intelligence reports from North Eye. All of the mirrors were back online now. Most were watching the surrounding moonscape. But a big fraction of the others were pointed at the south pole, various experts happily reporting that there weren't any hordes charging across the Aitken Basin. There was nothing to see but a few infrared signatures, big and weak and gradually growing larger, and the plainly rattled voices held every possible opinion about the numbers and speed and the potential for danger.

But these mathematics were simple, Jefferies knew. The first of these creatures fell on the Moon 10 hours ago, and it ran straight south at 30 kilometers an hour. Give or take. Every bridge that it passed had learned how to make its species. A species perfectly adapted to the lunar environment, apparently. That stowaway was tiny. A child, maybe. But the adults pouring across from other worlds were huge, and at least as fast, and how much time did that leave them?

Ten or 12 hours, according to North Eye. But that was a teasingly sweet estimate, Jefferies kept telling himself.

Thinking how their enemy could practically disappear at will.

"Organic batteries," the surgeon offered. "I'm just guessing. But judging by the scans and the samples—"

"Is it a robot?" Lieutenant Nguyen asked.

"No," he replied. "Under the carapace, it's flesh. Odd flesh, and dead. But there's no machinery here."

Jefferies closed the intelligence files, and he ignored the buzz of distant generals. All that mattered now was this crude, enormous autopsy. How did the creatures work? Was there some quality, some little weakness, that could be exploited.

The surgeon—a grim and determined Maori man wearing a fat man's suit—had cut through the exoskeleton and some kind of elaborate insulation. Like fat, only a lot more complex. Could it prevent heat loss when the creature wanted to vanish? That would explain a few things. What the surgeon called "batteries" made up a hefty portion of the creature's interior. Like lungs, sort of. With three hearts and three independent circulatory systems, the blood that hadn't boiled away looked nothing like hemoglobin. The entire body was full of redundancies. And it was something that someone had designed, apparently. Preliminary

inary tests found earthly DNA arranged according to earthly rules. Each codon transcribed the same amino acid that you'd find in Wellington or London. Indeed, some of the dead creature's genes had been pulled straight from familiar creatures. In its carapace were proteins from blue crabs and common grasshoppers. And the neurological genes had been stolen straight from Homo sapiens.

"This is an artificial organism," the surgeon declared. Astonished, and outraged. "I don't know how, but somebody grew it in a lab somewhere. Or at least, they built the little one that rode up here in that bullet."

"How smart is it?" asked Lieutenant Nguyen. "Can you guess?"

The brain was encased in armored bone and insulation, and it

"Salute!"

He felt a genuine smile building.

The first hundred reinforcements were standing under that lime-green tent in Florida, stripped and ready. But they didn't come across during the next few moments, which was a small surprise. The platoon stared at the simple red X on the floor, and waited, everyone too happy and too well trained to break out of their erect stance. This was the military, Kracker reminded himself. Some last instant delay; nothing worth the weakest worry.

But then a fat minute had passed, which was too long.

Kracker heard the sergeant call up to the lieutenant. Just to double-

But the chaplain was an AI. A machine trained to listen and spout sympathy.

was buried deep inside the thick neck. But a slug had hit the brain, liquifying it, nothing left but an empty chamber perhaps twice as large as a human skullcase.

"All things equal, a larger body demands a larger brain," the surgeon admitted. "But the relationship is exponential. And complicated. My guess is that our friend here was just about as smart as any of us. Or as stupid. Depending on your point of view."

Jefferies looked at one of the scans, asking, "What's this?"

"A stomach, maybe."

It was obviously a cavity. Large enough for two people to stretch out inside. "But if these creatures feed on electrical energy—"

"I'll pull samples. Soon."

Jefferies said, "How about now?"

The surgeon nodded grudgingly, then yanked a laser drill from a toolbox and climbed on top of the corpse. As the drill ate its way through the exoskeleton and fat and muscle, he offered, "It could be simple water. It's another guess, but it seems reasonable. If you're a creature designed to live in a dry vacuum, it would pay to store extra fluids."

For an instant, intuition tickled Jefferies.

Then the surgeon cursed and fell back, and the belly's contents shot up into the sky like a fountain. Whatever the fluid was, it boiled away in the sunlight. Hundreds of liters had turned into a thin little wind, then vanished entirely.

An odd, odd thought skated into Jefferies' consciousness.

When people came to the Moon, they were supposed to be hydrated and well fed. That was standard procedure. A man with a full belly and plenty of water in his veins emerged from the bridge with the same physiology. At least for a little while, he didn't need to drink any of the Moon's precious water.

But he wasn't adding to the Moon's total water, either.

Unless he eventually died here, of course. Died and left his moisture in this desiccated world, as a kind of inheritance.

But before he could mention his odd notion, offering it up for ridicule, a scrambled emergency signal pushed through everything else.

Suddenly Jefferies heard a familiar voice falling from the sky.

"This is North Eye station," he heard.

"We're under attack now," he heard.

Then after a strange long pause, the voice returned. Quicker than ever. And scared. Saying, "Good God, there is no end to them—!"

"ALL RIGHT, GENTLEMEN. BACK AWAY. LET'S GIVE OUR FRIENDS SOME room here." The sergeant was grinning, facing the bridge with his back straight. "Ten-ten!"

Kracker stood beside his sergeant.

check the schedule. The strong face remained alert and unconcerned, waiting for an update. Then the lieutenant, or someone, was talking. Kracker could just make out the buzz of a voice from the sergeant's fuzephone, and he noticed a certain look passing into that normally calm face. Not panic, and not quite fear, either. But an expression of enormous disappointment.

To the buzzing voice, the sergeant said, "Understood, sir. Out."

Then he stepped in front of his platoon and turned, facing them. And with a level slow voice, he reported, "A device, possibly a micronuclear charge, has just struck outside Pensacola, Florida." He paused, then reported, "Our reinforcements will not be coming." Again he paused, forcing himself to swallow. And because they deserved to know, he admitted, "Our bridge has been closed at the opposite end. Now and for the foreseeable future."

THE SLOPE WAS TALLER THAN ANYTHING SHE HAD EVER SEEN. BLUE made herself stop short, scorching for a better direction. But the climbing looked no easier to the south, or the north. Which was why she decided to pick her way slowly up this great face of ancient rock. Her father had always promised that she was tougher than this world. Even if she fell, she would certainly survive. But what Father didn't appreciate was that she was also easily embarrassed. That's why she took her time, stepping only when she felt surefooted, clinging with her fingers and toes on the very steepest parts.

She didn't want anyone to see her fall.

Even strangers.

After a long while, Blue reached the crest of a tall cliff high above the Basin, and she turned and sat down. Far to the south, the shadows looked deep and permanent. A little scrap of water ice lay somewhere in that great darkness. The only natural water on this world, Father had told her. She looking that way, imagining the future, when the sound found her. A great radio thunder emerged from the frigid darkness, filling every one of her ears.

The thunder was voices, she realized.

Joined-together voices.

A great, wondrous roar sang out of the cold, telling all of the universe: "Here we are! Here we are! Here we are!"

BURIED MINES BEGAN TO WAKE UP, BECOME ANGRY, AND EXPLODE.

Their blasts made no noise, and the flashes were minimal, energies spent launching shards of superheated metal at whomever dared to disturb them. But Jefferies could tell the mines were being tripped now. Seismographs detected each little shiver. Infrared

scopes watched the heat spread, then fade. But it never completely faded. In less than 15 minutes, the Moon's south pole was 50 degrees warmer than before. Which was still frightfully cold, of course. But sensors found traces of water boiling off into the vacuum, and one of the engineers' subroutines took the time to count exactly how many hundreds of thousands of liters were now freezing out as a thin, wasted snow.

"Think of the waste," Lieutenant Nguyen whispered. Jefferies looked at her, then his other officers. "It's not our ice melting down there," he reminded them. "We're seeing their blood and their belly juices."

The pace of explosions quickened, then stopped abruptly. After a too-brief pause, the next mine field—a full kilometer higher up the slope—began to sense bodies running past. But Colonel Lamb had already reprogrammed the triggers, making them wait until the first wave was past and the steep ground was jammed with huge scrambling bodies.

The entire mine field detonated in the same moment. This time Jefferies felt the explosions through his own toes. This time he carefully ignored the estimates of carnage, choosing instead to look at Nguyen and the rest of them, reminding them, "We're soldiers. There's no escaping it anymore. We know how to use our weapons, and we've got a workable plan, and we certainly have a duty here. Just remember this. Every minute we hold these bastards off, we increase our chances of getting back home again. And that's all we want, at this point."

No one spoke, or blinked. Then Jefferies told them, "Dismissed," and watched as his best friends anywhere filed out of the little com-center.

For a moment, he sat back, trying to think fierce, positive thoughts.

A voice interrupted his silence. A narrow face appeared on the nearest monitor. "Sir?" "Yes, Barker?"

The man's expression was tight, none of his old humor showing. "She's done," he reported with a quiet, slightly sickened voice. "If we need her, she's ready."

"I NEED FIVE. FIVE. TO BE WITH ME."

Colonel Lamb granted the words, then fell to his knees. He must have run all the way from the firebase, uphill and in a dead sprint. Kracker barely recognized the man. His face was pale and twisted, and desperately tired. The blond hair was soaked with sweat, and the pale eyes had a bright wild look, staring at the available reinforcements assembled at the barracks, probably thinking to himself: "Dear God, is this all we have left?"

Two dozen scared engineers, was all. With Kracker and his sergeant standing among them, helping them get comfortable with their railguns.

The stonemen—that was the new name for them—had been attacking constantly for hours. Without rest, or weapons, or any taste of fear. Jumpships would hit them from above, raking the slopes with explosive rounds, and the firebases would slaughter them until the dead bodies fell like an avalanche, knocking the living horde off their feet. More of them always came. Tens of thousands of them. Throwing rocks. Shouting in countless radio frequencies. Climbing and leaping, and eventually overwhelming the tired weepy soldiers in the undermanned firebases ... and the jumpships would have to quit fighting, wasting time and fuel to swoop down and lift the survivors up to the next temporary stronghold.

The sergeant pointed. Picked. Four engineers were going with Lamb. Then he turned and said to Kracker, "You'll help the colonel, too. Right, son?"

Kracker wanted to say something, but words didn't come. So he gave a little nod and turned, offering his hand to the colonel. The man took it and pulled himself to his feet, and after a final deep gasp, he grabbed a fresh gun off the rack and began walking

fast downhill, deactivating its safeties with the proper codes.

A woman engineer walked beside Kracker.

An Asian lady. He'd noticed her plenty of times in the past. She was pretty, mostly. But real intense, and she always acted serious and certain about everything. Not the kind of woman he normally fell for. Except today, for plenty of reasons, she seemed different. She seemed vulnerable. As they moved down the long slope, heading for the Basin, she began to cry. Scared enough for tears, the lady was. Which made Kracker feel tender toward her, and that's why he told her, "When the time comes, you'll do just fine."

EVEN AT CLOSE RANGE, THEIR RADIOS SPUTTERED AND CRACKLED.

He heard her sniff, good and hard. Then she looked sideways at him, snapping him with that Kiwi accent. "I know I will."

"Excuse me," he said.

She looked straight ahead, saying nothing now.

"I'd tell you everything's going to be all right," he explained, "but you're a smart person, and you'd know I was lying."

Then she said, "I'm sorry."

Still looking straight ahead. But not crying anymore.

"It's just—" she started. But a huge ripping roar out across the radio spectrum, their com-links fighting for quiet frequencies. And when there was enough quiet to talk, she asked, "Do you know how many stonemen it would take to make this much noise?"

"Millions?"

"More," she told him. Flat out.

He glanced up at the sky. At the changeless gray face of the Moon.

And trying to imagine it, he said, "Billions?"

"Or more," she promised.

Then he looked down again. He watched where he put his feet, and he tried to think of a good smart question to ask her. Now that he had her talking. But before anything occurred to him, Kracker noticed that they were coming up on the River. It was a giant pipeline made of alloyed steel and cloaked in gray insulation, and it lay on the Moon's dusty surface, the low Sun illuminating this side of it. No shadows. No places to hide.

Colonel Lamb suddenly pulled up, shouting across a different com-line. Trouble at the firebase, probably.

Everyone else stopped now.

Kracker started to say, "Keep alert."

But then he saw something odd. Unexpected, but not. And of all the possible reactions, for some reason he felt like laughing.

A man appeared beside the River.

He was a he. Naked, and slender. An ordinary human in every possible way. Except for the fact that he was standing naked on the surface of the Moon.

Kracker started to say, "Look—!"

The stranger stepped back, and vanished.

Lamb turned and said, "What?" to Kracker. Then before anyone

answered, he admitted, "The enemy's slipped past the firebase now."

Then again, he asked Kracker, "What did you see?"

A second naked man stepped into plain view. From the same spot, holding his breath and looking around with his boiling eyes. Then he realized that he wasn't wearing the right body, and he stepped back again. Gone.

Kracker aimed at the new bridge.

"They're coming through—" he shouted.

And a third human appeared. Only it wasn't human, of course.

This was an alien wearing human flesh and human bone ... and Kracker fired a single round, puncturing the bare chest and obliterating the newly made heart ... and as the body collapsed, his slug pierced the River's insulation and the steel, a tiny hole letting out a sudden little geyser ...

Far below, where the River looked tiny, a lone stoneman appeared, sprinting toward the new bridge.

Suddenly the bridge found a more appropriate species to create.

The next soul through was dressed in a stoneman's body, and Kracker cut open its belly before it fell back again, leaving its juices boiling on the trampled dust.

Lamb was shouting at someone. Colonel Jefferies, probably.

Kracker ordered everyone to aim at the bridge, knowing what was coming.

And then it was as if the punctured pipeline was spitting out stone-men. Dozens and dozens of them exploded from one point, and fell, and there were always more following ... and Kracker watched one and then two more of them leap over the huge pipe, vanishing behind it ... presumably running upstate to the next unsuspected bridge ...

Through the crackling sputter of the radio, someone called out, "Retreat!"

Colonel Jefferies had.

Lamb shouted at one of the jumpships, ordering it to land at the fire-base below and take survivors to the bunker.

Where they'd make their final stand, Kracker knew.

To the soldiers around him, Lamb shouted, "Return to the barracks. Now!"

Kracker started backing up. But the woman hadn't heard the colonel, or maybe she'd decided to ignore him. Either way, she was

out the glassy nipple.

The crater's flat round floor had several active bridges.

Thousands were coming across now, taking a few long steps before contributing their treasures ... and for the first time, Blue noticed how the dust was growing sticky, and how the haze of boiling water was beginning to loom overhead ... dimming just a little the glory of her little world ...

THE BUNKER'S BIGGEST RAILGUNS FIRED SO QUICKLY THEY SEEMED to be humming. As doing all the aiming, each round sent where it would manage the maximum harm.

Jefferies barely noticed the guns.

He was studying the last intelligence reports from North Eye. Uncoded and sloppy, they had arrived moments before that distant com-laser filled for good. Moments before the last redoubt was overrun by a horde that looked very much like their horde. What Jefferies

"Is it true, sir? Are we really up here to hunt for aliens?"

kneeling, firing in measured bursts, her fancy River now punctured in a thousand places and the vacuum pushed back by a fog of fossil water and alien juices.

Kracker shook her shoulder. For an instant, she glared up at Kracker, ready to shoot him instead. Just for bothering her.

"We're pulling out," he shouted.

She didn't react.

So he told her, "This is a stupid-ass place to die."

Which did the trick. Thankfully.

HE WAS A DIFFERENT SORT OF FERSON.

Huge, like the others. With the same eyes and mouth and lovely hard shell. But his proportions were different. His long legs were matched by strong, oversized arms that slapped at the ground after every leap, giving him extra speed. She had watched him since he first appeared on the crater's lip, marveling at his fantastic pace. Now he reached her and put down his hands and feet, gouging the dust and kicking rocks loose as a happy, happy voice said to her, "You're the baby Blue."

"And you're one of the Greens." She knew it, but believing it was hard work. "Did you really run all the way from the equator?"

The Green said, "Of course not."

But that wasn't how she meant to ask it.

"I started there," he said, pointing at the sky with one of his thick hands. It was night where they were, and the Moon's day face was as bright as it could be. He pointed to the bridge where he had entered this world, and when she asked where he would stop, he said, "Here. Of course."

Where he met his first Blue. Of course.

Someone else stepped out onto the nearby dust. A Blue woman, by chance.

The Green smiled with his eyes and said, "It was an honor to meet you." Then his mouth opened, his belly disgorging a great soggy lump of complicated black goo. And with a half-leap, he reached the nearby opened bridge, and vanished.

The new Blue asked, "Are you hungry, darling?"

"Very much," the girl admitted.

The woman took her in her hands and nursed her. And while the first Blue ate, she watched others come across the bridge. Half of the time, they were Greens. The rest of them were full-grown Blues. Each emptied his or her belly, then vanished again. Each was replaced by a thousand more Greens and Blues. It was wondrous to see. Majestic, and important. The girl was almost sorry when it was time to leave, telling the woman, "Thank you," as she spit

found was an autopsy performed by North Eye surgeons and staff biologists. With real facilities and far more resources than he had at his disposal, the experts had dissected three corpses, learning plenty about the internal structures, and in particular, what the creatures carried inside their huge bellies.

Gases, as it happened.

Compressed to near-liquid proportions, there was molecular oxygen and nitrogen—in familiar proportions—plus a flavoring of carbon dioxide. There were also new, unfamiliar molecules, huge and volatile, possessing unknown properties.

Jefferies watched a digital of the autopsies. In the background, he could make out the telltale hum of railguns firing at the enemy. Then the guns sputtered, and stopped. And the biologist worked faster now, forcing the collected gases through finer and finer filters, examining each for anything rare and remarkable.

"I've got spores!" one of them cried out. "Looks bacterial!"

"Co-examination?" another offered.

"No," the first scientist declared. Then he said, "But it's not a surprise, if it's true. When we come across a bridge, we always bring our internal fauna with us. After all, we couldn't live without our com-mensal *E. coli*. Could we?"

Nobody else spoke.

"So what these bugs do—" he began to ask.

And that's where the transmission came to an abrupt, inevitable stop. Jefferies was left staring at a black screen, trying hard to formulate his own answers to big questions. But wasn't it all pretty obvious now? He sighed. He thought to listen for the hum of his own railguns. Still firing, with enough rounds in storage here to keep them firing for another twelve or thirteen hours.

Assuming one round for every kill...

Good God!

Then out of pure habit, he calculated the liters of fresh water that each dead stone-man carried inside himself. He calculated the apparent density of useable bridges on the lunar surface—one per square kilometer—and how many new stone-men might cross each of those 30,000-plus bridges. And once again, he wondered why the creatures even bothered to fight. Hadn't they won this world outright, in the first few minutes...?

"It's the Earth again," said someone.

Said Lamb.

"They want whoever's in charge up here." The American's face was older now. Like everyone's. And those blue eyes had acquired a stark emptiness. But the man still had enough pettiness to act insulted, shifting Jefferies' monitor to the proper channel, saying, "Apparently, we're the last ones alive on the Moon."

Jefferies had grown to appreciate the man's pettiness. It was a small, simple quality that made it easy to win his heart.

"This is your show, too," he told Lamb. "Sit with me."

The weary face managed a little smile.

A dozen important faces appeared on the monitor. The U.S. President. Five Prime Ministers. Plus the Secretary General. It was the Secretary General who spoke first, asking, "What is your situation, Colonel? Colocels?"

"Excellent," Jefferies replied. Then, "If you can open up the bridge in another few hours, we can walk home. And that's all we want, at this point."

The most powerful humans anywhere wore a look of shared embarrassment.

The President coughed, then admitted, "The Florida site ... it's far too hot radioactively ... to bring in new equipment, I'm afraid ..."

Jefferies glanced at Lamb.

Then he asked, "How soon? At the earliest."

Nobody would answer that perfectly simple question. Instead, the Secretary-General reported, "We have made some good diplomatic contacts with the enemy, and be assured, we're entering into serious negotiations with them."

"Well, that's good news," said Jefferies.

Then he looked at Lamb, at those weary, angry bright blue eyes. And because there wasn't anything else to do, the two men fell into laughter, their faces turning red, little tears of ocean water sliding to the floor.

THEY WASN'T FIGHTING ANYMORE.

The construction robots had torn down every building and obstruction within four hundred meters of the bunker, leaving a flat round plain with nowhere to hide. But the stonemen simply charged through abandoned barracks and down the crater wall, sweeping through the unfurnished city and into the open, running shoulder to shoulder, a few throwing rocks but most simply screaming with their fiery radio voices, each of them shot after their first long stride, collapsing forward and exposing the next line of tall gray bodies that were shot in turn, exposing a third line, and a fourth ... and a fiftieth ... and on, and on, without even the remote hope of finding any sort of end ...

Kracker had exhausted 10 or 12 railguns already.

And himself, too.

Twice, he caught himself doing nothing but standing, his newest gun begging for more ammunition. The third time, it was the sergeant who saw him doing nothing. It was the sergeant who shook him, saying, "Son," with an easy, understanding sternness. "Feed your gun now, son. And for everyone's sake, keep fighting."

But it wasn't fighting. Not anymore, if it ever was.

Nguyen stood a couple of meters to his left. She was so tired that she had to lean against the bunker's armor to hold up her gun. In a clasp, dry-mouthed voice, she sobbed, "Look at all of them coming! Look!"

Stonemen were running into the crater from every direction now. Like some angry gray flood, they flowed down the walls and along the packed streets, then without a shred of fear, they scrambled up the wall of dead bodies, shot when they reached the top and pitching forward in death, juices boiling as their carcasses slid on the icy bloods, carrying the wall that much closer to the tiny, tiny bunker.

This wasn't fighting.

Fighting meant you might actually, against all odds, win.

But of course Death never lost. Because it was so powerful and so incredibly patient. Death might let itself be delayed for a little while. Just to tease you. But eventually that glacier of gutted corpses would work its way to Kracker, and the next line of brave strong stonemen would leap over and charge down at him, and he might kill them, too. And the next ones after them. But eventually one of the creatures would catch him with one of those powerful hands, and he would be shaken and torn apart in a painful last instant—

"Look!" the woman screamed. "Watch it!"

Kracker blinked, and breathed. And too tired to move a single mus-

cule more than necessary, he turned only his neck, eyes slowly focusing on his companion.

She carefully mouthed the word, "Watch."

Then she aimed her railgun toward the south. Toward the sky. With stumbling thoughts, Kracker wondered why she was firing where there wasn't any visible target ... and then he slowly, slowly noticed how the slugs left telltale streaks of rusty orange after them ... their iron hulls burning in the early beginnings of an atmosphere ...

He was too tired to be startled, or even feel the vagueest interest. What he could do was nod and offer up a tiny smile, then turn his head and continue punching holes into the next gray figures to come boiling over the hill of bodies.

Like little meteors, his slugs skinned into a very thin wind.

Then into the stonemen's wet bellies.

For a minute, or a week, he kept up his fire. Then a familiar hand clamped down on his shoulder, and the beefy face drifted into view, the voice shouting above the white roar of 10 billion voices, telling him, "Now, son. With me. Into the bunker. With me!"

A dim little memory tickled him.

Then faded.

The woman was beside him, doing a shuffling stiff-legged run, and the sergeant kept pushing at them, shouting at someone else, "Clear, sir! Clear! I got the last of them! We're clear!"

Kracker felt the blast before he saw anything. The ground shivered and lifted enough to make him stumble, and when the small hand took him and helped him up again—the woman's hand helped him—he turned enough to see her grim but pretty face framed by a long slope of dead and dying stonemen, and the living ones sprinting down over their dead, and the crater wall beyond giving him some reason to pause, and stare.

The south wall was beginning to collapse.

It took him a moment to realize what he was seeing, then remember everything: Lieutenant Barker had buried their tiny stockpile of nuclear munitions in the weakest seams and the deepest of the frozen lakes. Shattered stone and geysers of superheated steam joined together, the avalanche fantastically vast, and quick, and magnificent. This was their worst-case, last-breath plan. An engineer's elegant solution in the face of the utterly hopeless battle.

The three of them finally reached the airlock.

Maybe 30 others were already inside, wasted faces staring out and their bodies slowly jostling to make room. Surely in another few minutes, with rested heads, they would have found plenty of room. But there wasn't time, and everyone was sick with fatigue, and the outer door refused to close. There simply wasn't space for them.

The sergeant said, "Up you go, ma'am. Up!"

With Kracker's help, the two of them lifted her on top of the other bodies, ground hands clamping her and pulling back out of sight.

The ground under them rippled harder now.

A quick hard certain look came into the sergeant's face. But it was Kracker who punched the switch, closing the outer door. Then the men turned together and stared as the avalanche of rock joined the slower avalanche of falling and crushed metal ... and Kracker was running suddenly, charging up the slope, thinking that if he could find a hiding place, maybe ... a dark, strong place somewhere inside all that fantastic gore ...

And after all of her running and all of her considerable, wonderful fun, Blue found herself back where she had started from. Her birthplace barely showed above the great blue waves. Walking on the new lake floor, leaving chimney footprints in the very new mud, she reached the ship and poked her head into its empty interior. But there was nothing new to see, and after she grew tired of marvelling at her modest beginnings, she scaled a nearby boulder, intending to sit in the sunshine on that new island, watching as her world grew up around her.

To her surprise, a man was already sitting there.

He was a new kind of man. Not a Blue or a Green, or even a Red. He looked small and pale, with some kind of tangle rooted in his big-

mouthed head. Of course he wore no clothes. Nobody was making clothes yet. But he must be important, since he was holding a simple machine in his very tiny hand.

They were making machines at the other end of the world, she had heard.

Then the man spoke, and she heard his voice plainly in her radio ears. "Aren't you going to greet me, darling?" he inquired.

She knew his voice.

Quietly, happily, she said, "Father! Is it really you?"

"It is," he replied.

Then he tensed her, saying, "But maybe you're not my daughter."

"But I am! I am!"

He laughed, telling her, "I know you are, Blue. I know. Why do you think I've been waiting here for you?"

"Why have you waited?" she asked.

"I want to take you somewhere else now."

"And leave my world?" she spluttered, in horror.

Again he laughed, shaking his head, that strange oversized mouth eating nothing, making little sounds that the little machine took and made into words that she could hear. "We'll come back soon. I promise. But if you want to keep living on your world, you and your sisters need bodies like this—"

"My sisters?" she blurted.

"Are waiting for you. Just a few steps away, in fact."

She was too happy to speak, or move.

"Come," her father called out, beckoning with his soft little arm.

"After me, now. Come."

AFTER TWO WEEKS OF LOW LIGHT AND INCREASINGLY STALE AIR, someone in Florida managed to reopen the bridge, and some brave young man stepped through with his hands raised high, screaming at the top of his lungs, "Friend, friend, friend!"

Nobody shot him.

Even if they thought he was the enemy, they likely would have left him alone. Two weeks buried inside the bunker, eating rations and sleeping for 20-hour stretches, had cured that awful urge to wage war. At least Jefferies felt cured. He looked at the visitor, then called out for someone to give the man some clothes. Once their guest was dressed, Jefferies and Lamb joined him. Introductions were made. The obvious questions were asked. But the young man only answered the first question, saying, "We have a truce now. For the past 10 days, and it seems to be holding." Then he showed them a big, earnest smile, adding, "It's such an honor to meet you finally. Colonel Jefferies. Colonel Lamb."

What did he say? An honor?

The young fellow turned, shouting at everyone, "You're heroes, all of you are. Everyone on Earth knows the story. You went toe-to-toe with our enemies, and against all odds, you fought them to a standstill. An honorable, worthy draw."

Lamb was first to laugh, asking, "Is that what happened?"

But the poor innocent didn't recognize sarcasm. Barely half of the original contingent of soldiers and engineers stood before him, watching in astonished silence as he flailed his arms through the air, telling them, "We have medals waiting. Every one of you is going to get the UN's highest honors..."

There was a long, embarrassed pause.

Then Jefferies stepped forward, and half-seriously, he said, "You can keep your little medals."

He told the wide-eyed fellow, "What I want is beer and a hot shower."

Then Jefferies sat on the floor and calmly crossed his legs, rolling his hand over in the dark damp air. "Go on, son. Find us hot showers that waste water and plenty of good cold beer. Then you can come back and get us—"

"Get you? I don't understand, sir—"

Everyone else sat now.

"We'll be waiting here," Jefferies promised.

"Sir—?"

"Hurry," Nguyen shouted. Laughing now.

Everyone was laughing.

And the poor fellow shook his head and turned, then gamely sprinted for the words that someone had painted on the floor, the sign reading: This Way Is The Way Home.

IN THE END, HE HAD MANAGED TO CLIMB UP NEAR THE TOP OF THE corpse heap, then duck inside the gutted body of a stoneman. The thick carapace and the surrounding bodies managed to blunt the avalanche just enough, and after being spun around and halfway crushed, Kracker survived. Barely. Then for what seemed like a thousand years, he used his field shovel and his hands, working his way upward through the last of the bodies, then the loosely packed rock. The light lunar gravity helped. Desperation helped more. Eventually he broke into the open, finding himself on what looked like another planet. Except the craters in the sky were the same, if you ignored the blue water. And the clouds. And the astonishingly green patches where some kind of happy vegetation had taken hold.

Gratefully, he pulled himself out of his lifesuit, breathing the fresh new air.

Wearing nothing but his mesh underwear and his salvaged boots, Kracker walked across the shattered landscape. He ate the last of his suit's rations before tackling the crater's new wall. It was steep and slick-going, but if he took his time and used his strong Earth muscles, he made fair progress. At least this was easier than digging your way out of an avalanche, he kept reminding himself. The Sun was heading down by the time he reached the summit. But thankfully, this new atmosphere seemed to know how to keep itself comfortably warm.

The dirt-covered domes of the old barracks had survived.

Another reason for thanks.

Kracker was hoping to find a working com-laser and get out word of his predicament. But what he didn't expect was to find people living in his old quarters. He certainly didn't anticipate coming face-to-face with a pretty young girl dressed in a spare UN uniform, her little body barely half-filling what Lieutenant Nguyen had filled so nicely.

The girl's eyes grew huge, then she turned and ran away.

Kracker chased her.

The chase ended at the other end of camp. Two more girls were sitting in the open, apparently staring down at the Aitken Basin. One of them ignored Kracker. But the other smiled, gave him a half-wink, and with a blue water accent, she said to him, "I'm the Blue."

"The what?" he blurted.

"The one who brought the water," she said with a gentle patience. "And who are you, dear friend?"

"Kracker."

"Well, Kracker. These are my sisters, of course." The girl gestured at the first girl that he'd seen, saying, "This is the Green. She brought us our beautiful black soil and almost everything growing from it."

He stood motionless. Numb, and stupid.

"And of course, this is the Red." The stack-up girl who ignored him. "She's the one who brought the oxygen that makes the red fire and fills each of us with life."

Say something, Kracker was telling himself.

Anything.

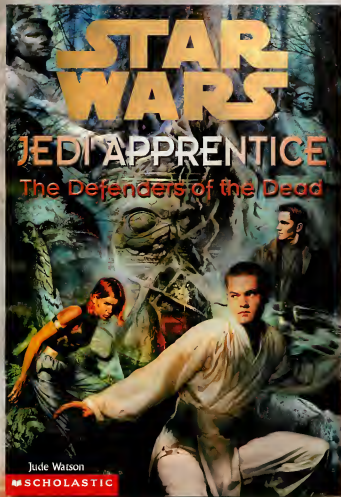
But then the friendliest girl—the Blue, who happened to have deep blue eyes—smiled and asked, "What do you think of our world, Mr. Kracker? Tell us truthfully."

"Tell us truthfully," she insisted.

Then the strange man stepped forward, looking out over the great blue ocean that now filled up the once-frigid basin, and the high clouds dropping their first warm rains... and after taking a deep, deep breath, he said with a quiet little voice, "My God, honestly... I've never seen anything as beautiful—!" □

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10

ΣΤΟΙ

THE



He was the most famous mathematician the world had ever known. But would he control the numbers or would the numbers control him?

THE SQUARE ROOT OF PYTHAGORAS BY RUDY RUCKER AND PAUL DI FILIPPO ILLUSTRATION BY JOHNNIE POWELL

THE SQUARE ROOT OF PYTHAGORAS



KOS

THE CROOKED BEETLE SEPT A number-form into its cupped claws, the number a black oozing mass almost 10 stadia in length if uncoiled, now intricately folded into and through itself. The creature's oddly articulated arm joints creaked as it urged the prize upon the human standing cowed before it.

"Take it now," said the openrow Beetle in a highly modulated drone. "You're almost ready for it. The ring and the rest of our gifts." The prize's weight was immense, and the human staggered, lost his balance, seemed to fall sideways out of the dream universe.

Morning sunlight fell across Pythagoras's face and he woke. For a few moments his mind was blessedly empty, free of the crooked, the infinite, the irrational, the unbalanced—free of the openrow. Pythagoras sat up, pulling a curly sleepcap around his shoulders like a mantle. Looking out of the mouth of his cave he could see down the rocky slopes to the orchards and fields that nestled in the curve of the river Nestos.

The river. Sight of the gleaming Nestos, which brought back the weight of his insupportable 1,717,147,

his little store of five wistful numbers (including the river's number, which, like the others, was inconceivably long. The knowledge of the River Number had come to him from the *gnarrows* women, the first of the *gnarrows* beings, who'd appeared to him half a year ago.

Now there were five of these grotesque, uncouth, raggedly formed creatures haunting his nightly dreams. A terrible psychic burden, yes, but there was gain in the encounters with the Tangled Tree, the Equid Worm, the Bristle Cat, the Swarm of Eyes, and the Crooked Beetle, for each of them had made Pythagoras a gift of a magical power-number. The Crooked Beetle had been disturbingly portentous in gazing of its boon. The new number surpassed all the others: it was of a crushing size. Clearly it meant something important.

Pythagoras sometimes wished that he could still believe his old teachings: that the world was a simple pattern of small, integral numbers; it would be nice once again to have a soul as innocently harmonious as two strings tuned to the ratios of five and three. The openrow dream creatures and their terrible gifts had begun to undermine everything that Pythagoras had once believed.

Thank Apollo the Sun was back with its respite from the dreams. It was a fresh day, a good day, with students to teach and, perhaps, come late afternoon, a noblewoman to dally with.

There was a large stone ledge outside the cave, Pythagoras's public space. Stopping to the hearth there, Pythagoras assembled a rough cone of twigs and prepared to invoke the Fire Number he'd obtained from the Bristle Cat. This number was not the skeletal "four" of the tetrahedron, which some took to be the form of Fire; no, thanks to the demons of the *apeiron*, Pythagoras had experienced the *gnoia* of one of the true and esoteric numbers for physical Fire in this fallen world of Woman and Man. The magically pulsant numbers for physical things were so huge that of all men who had ever lived, only Pythagoras had the mind to encompass them.

Pythagoras formed the Fire Number in his soul and projected it outward.

The sheaf of twigs, really no cone at all, became covered over with coarse red/yellow triangles and pyramids, mere simulacra of flames, for Pythagoras's Fire Number, in the end, was but a workable approximation. Now the divine nature of the world intervened, cooperating so that the lithe, curvy forms of actual fire sprang up from the twigs. The Fire Number kindled the true Fire inherent in the organic wood, activated the particles of elemental Fire placed in the wood by the beneficent rays of the great One shining Sun.

As the fire heated the water for Pythagoras's morning ablutions, the philosopher pondered his dream of the Crooked Beetle and the vast new pattern gained at such costs from his dreamworld familiar. The new number-form corresponded to some object or quality to be found in the mundane world—the *peron*—in which Pythagoras was now once more firmly enmeshed. But the crucial identity of the pattern would remain a mystery until he actually experienced the shock of recognizing the physical form to which the number was attached in the higher realms. Pythagoras had learned patience and was content for the time being simply to revolve the number in his powerful mind.

Soon Pythagoras had finished washing and was intent on assembling, like any common hermit, his simple breakfast of honey, dates, and almonds. How useful it would have been, Pythagoras thought as he enjoyed his meal, to have the numbers for these staples. But the creatures of the Unlimited granted their gifts capriciously, and when for his second gift he'd asked the Tangled Tree for the signifier for Honey, he'd instead received a Sheepskin Number.

No sooner had Pythagoras brought the last fingerful of honey to his bearded lips than he espied his prize student, Archytas, eagerly ascending the slope to his teacher's cave. Pythagoras sighed, daunted by the zeal of the young man.

Archytas began talking excitedly before he'd even reached the ledge. Something involving the golden ratio and a new ruler-compass method for inscribing a regular pentagon within a circle. Pythagoras let the words flow past him undigested. He found his young acolyte's modernistic geometric constructions overly refined.

"O, why not just use trial and error till you find something that's reasonably close to cutting the circle in five?" said Pythagoras. He would have despised such a thought a year ago, but his escalating traffic with the demons of the *apeiron* had corrupted the asceticism of his taste.

Hoisting himself level with Pythagoras, Archytas gave a short, baying laugh, assuming his mentor to be joking. "Indeed. And why not jump headlong into the pit of impiety and say that integral numbers are not the basis of all things? Why not maintain that the *apeiron* is the very warp and woof of our world?"

"Will Eurythoe be coming for her lesson today?"

Taken aback by the abrupt change in topic, Archytas made a face as if he had bitten down on an olive stone. His demeanor grew stiff and somewhat remote. "My mother, the gods save her, indeed persists in her uncommon thirst for knowledge. Echoing my father Glaucias's complaints, the other wives look askance at Eurythoe's unbecoming

philosophical ardor, wondering why she cannot content herself with simple domestic pursuits. But I squish all such talk by deferring your virtues, both as a citizen and as a wise man." Archytas stared grimly at his teacher. "I hope my faith in you is fully justified."

Pythagoras felt a snidgle of shame. He disguised the feeling with a peremptory manner. "Of course, of course. But you still haven't answered my question."

Archytas forced out the reply: "Yes, my mother plans to visit you in the late afternoon."

This matter settled, the two men picked up their dialogue not from Archytas's revolutionary construction, but from the point where Pythagoras's discourses had ended yesterday. As the Sun rose higher, they were joined by other young scholars from Tarentum, until finally Pythagoras sat at the center of a stellated polygon of questing minds. The topic for today was Pythagoras's wonderful geometric proof of his great theorem that in a right triangle, the square on the hypotenuse equals the sum of the squares on the sides. To illustrate his argument, Pythagoras drew a diagram in a flat patch of sand; it was his "whirling squares" image, showing a square inscribed at an angle within a larger square.

Although Pythagoras's belief in his original worldview was all but shattered, he still enjoyed the verbal puppet show of his ideas. He taught with a craft and a grace that came from long experience; he could make dry magnitudes and geometries sing like the notes of a fine musician's lyre.

When the Sun was high overhead, rumbling stomachs dictated a break, and the living polygon of scholars fell apart into its component points. Taking advantage of the shade in the mouth of the cave, the town-dwellers broke out food from their wallets, eagerly vying to offer Pythagoras the choicest morsels of flatbread and feta. Their teacher accepted with the stern good nature that chose no favorites. Gobs of cool water from Pythagoras's personal spring complemented their simple fare.

"King Glaucias spoke of you again last night, master," said the sinewy, wolfish Alcibedes. Unlike the other pupils, he wore a short sword at his belt. "At dusk in the forum. He told the Senators and the slow-witted priests of Apollo that you are a sorcerer. The icosahedral ball you gave Eurythoe—Glaucias terms it a magic amulet. He claims the mere sight of it caused the goats to give sour milk."

"My father is troubled," said Archytas. "He thinks the people tire of his rule. The unity of our little band disturbs him. He fears you may foment a revolution, Pythagoras. Now that you've won his wife and son as pupils, who else might not follow you?"

"A tyrant's bed is most uneasy," murmured Alcibedes, staring down at his sword.

"What of the common citizens, then?" said Pythagoras. "Do they speak well of me?"

"The farmers are happy to have their fields well surveyed," said Meno. "And the innkeepers rejoice to have so many of your students lodging in Tarentum."

"Pythagoras's knowledge of the heavens has even helped the priests in their computations of our calendar," claimed in Dascyus. "After all, was our teacher not the first to reveal the identity of the Evening Star and the Morning Star?"

"Even so, Glaucias can inflame the rabble to hate me," said Pythagoras. "At times I fear for my life."

"Perhaps Glaucias fears for his life as well," said Alcibedes. "Who knows what the future might bring? It seems unlikely that both you and he can live here forever, O Master. What if you really were to die? You should prepare us. Can you not lift the injunction of secrecy from your great teachings? We long to spread your wisdom far and wide. Indeed no man is immortal, and when you pass into the Elysian world, it will be our lot to incultivate your noble truths. Were it not better that we begin to practice at it even now?"

For the second time today, Pythagoras felt a twinge of shame. His reasons for making his teachings secret were simply that he did not want to give away that which he could sell to students. "I will ponder upon your suggestion, Alcibedes," he said slowly. "But now, my children, let us return to our studies. If some day you are to farm

these plants, you must learn their foliage well."

After several more hours of vibrant discourse, Pythagoras abruptly called a halt to the day's lesson. "My faculties are waning, lads. We shall delve further into the consequences of my great theorem tomorrow."

As he watched the sturdy youths rollick down the slope toward Tarentum, Pythagoras realized he had told them only half the truth. While his intellectual powers were indeed spent for the day, the energies of his loins had reached an almost painful peak as he anticipated the arrival of Eurythoe.

Pythagoras barely had time to clean and curl his beard before he spotted Eurythoe on his side of the river; her delicate, sandal-clad feet scribbling a clean curve across the rocky slopes, a curve designed to intersect the vertex of his soul.

She arrived, flushed from her hike and infinitely desirable. Black curls lay pinned by a sheen of sweat to her brow. Her bosom fluttered beneath the white fabric of her robe. A subtle musk as of some wild animal rose from her pleasing form.

Eurythoe's deep gray eyes met the gaze of the philosopher, yet her manner was skittish. Rather than immediately accept Pythagoras's embrace as was her wont, she looked nervously back toward Tarentum.

"What troubles you, dear Eurythoe?"

"I am consumed by fear that our illicit love will be discovered. I saw a most evil omen this morn."

"What manner of omen?"

"One of the slaves returned from the market bearing a pannier of fish, and atop the wet pile lay one with a dark, muddily tail. You've often inveighed against those very creatures! *Eat not fish whose tails are black.*"

Pythagoras made a dismissive gesture. "My reference to the evil nature of such creatures was but an allegorical warning against those who draw strength from muck. Do not trouble yourself any further, Eurythoe. You didn't eat of the fish, did you? Very well then, we've nothing to fear. Let us hie ourselves to my soft, warm pile of sheepskins."

Conducting the wife of Glaucus, the mother of Archytas, into his cave, Pythagoras soon revealed in the sight of her naked charms. Quickly doffing his own clothing, Pythagoras caught her up in his embrace. As she always did, Eurythoe began their lovemaking by stroking his golden thigh.

Marvel of marvels, an extensive, irregular patch of Pythagoras's inner left thigh was some substance other than flesh. The stuff was utterly impermeable, too hard to cut with a knife or even to scratch with the noblest gem, yet it was also like the thinnest leaf of beaten metal, flexibly mimicking the architecture of his muscles and tendons and veins, the bright patch merging imperceptibly with his skin. Although the inadequacy of language forced Pythagoras to call it "adamantine gold," the thigh seemed really to be of a substance quite other than anything seen upon Earth.

The golden thigh was an uncanny scar from Pythagoras's very first dream-meeting with the creatures of the *apeiros*, the thigh an ever-present reminder that the creatures were indeed more than dreams. In that first meeting the Braided Worm and the Crooked Beetle had appeared to him, the Worm a loquacious and foully knotted creature whose form so defied all definition that Pythagoras could never determine if its component strands numbered two, or three, or four. The worm had offered Pythagoras the magical power of the River Number, and when Pythagoras had greedily accepted the offer, the Beetle had bitten deeply into his thigh, turning a part of it into adamantine gold. The Beetle had laughingly termed the change a "memory upgrade," and then somehow the Worm had transferred the River Number into the enhanced Pythagoras. He'd woken from that dream irrevocably changed.

At first, Eurythoe had been frightened and repelled by Pythagoras's gleaming thigh. But when he told her the alteration was a sign of the gods' favor—and why not believe this?—she learned to find it erotically stimulating.

She drew her fingertips across the eerily sensitive surface of the

golden thigh, and soon the dust rose from Pythagoras's mound of sheepskins as he bisected Eurythoe's triangle and became the radius to her sphere. The even and the odd blended into the One. And then, all passion slaked, the couple lay loosely embracing, smiling full into each other's eyes.

Tying, as always, to mentally encompass the wonder of Eurythoe, Pythagoras mused that she herself must embody a number-form, as did every woman and man. Women were even numbers, and men odd. But what a large number it would take to adequately represent Eurythoe, to capture in a net of notational dots this woman's scent, the curved surfaces of her honey-colored skin, the soothing tones of her normal speech, and her sharp cries of ecstasy.

Suddenly there was a clatter from the lip of the cave. Falling stones? Pythagoras sprang nimbly to the arched opening, feeling himself lithe and wise. A well-aimed rock whizzed past his head and shattered against the cliff beside the cave's mouth. All at once he felt himself made, middle-aged, and absurd.

"Against the advice of your own maxims, you have poked fire with the sword, O Pythagoras," sang a mocking voice. "All the town will hear of it."

His tormentor was an open-mouthed, fat-bellied little figure in a white toga that revealed bare, thickly tufted legs. At first glance he looked like—a vengeful fish with a black tail. Evidently he'd come to spy on Eurythoe's lovemaking. He made the insulting gesture of the fig, and raced down the slope like a homing pigeon.

"Senator Pemptas!" exclaimed Eurythoe. "One of my husband's spies. O, Pythagoras, you must flee. I'll hurry down and try to save my husband's wounded pride. But I fear the worst for you." She began weeping.

"Must I run from an innumerate, bean-eating tyrant like a common slave?" said Pythagoras. "And what of my pupils? What of our love? I'd rather remain here in my cave, aloof with my music." Pythagoras gestured at his beloved monochord, a one-stringed instrument that had taught him much. "I've not told you this, Eurythoe, but the gods have granted me certain miraculous powers in addition to my golden thigh."

Eurythoe hugged him, dried her eyes, and began trying to repair the disarray of her hair with ivory pins. She succeeded only in making it appear that she wore a lopsided bird's nest atop her head. Finally she spoke again.

"There are too many of them, Pythagoras, and they will come for you. Humble yourself and flee. For what does anything matter if you or both of us are dead? Save yourself, and let me do what I can to salvage my own position. Think of your own maxims, Pythagoras. *Give way to the flock!*"

"You are right, my dear," said Pythagoras, quietly pulling on his robe. "*The flying dust survives the storm.* I leave on the instant. Spare me one last kiss."

Smooth lips met bearded ones, and then Eurythoe was light-footedly gone. Pythagoras dallied in the cave long enough only to pack a wallet with food. All other necessities were kept within the confines of his skull.

EMerging into the reddening light of the westerling sun, the philosopher paused for a moment's strategic reflection. Behind him, above his vantage, stretched an impassable wilderness of mountains: easy to lose pursuers there, but dangerous terrain to the hunted one as well. From those treacherous peaks he might never emerge. No, much wiser to head downhill, cross the Nessus, skirt Tarentum slyly while the citizens still organized themselves, then light out for greener pastures. No stranger to travel, Pythagoras had sojourned far and wide, residing for extended stretches in Thebes and Babylon, not to mention Athens, Rhodes, and now the rustic backwater of Tarentum. Surely he would easily find a new home in a land where the people were more understanding of the needs of geniuses.

Assuming he could bypass rustic Tarentum with his skull intact.

NOW THERE WERE FIVE OF THESE GROTESQUE, UNCLEAN, RAG

For the first time in many months, Pythagoras descended the screeslope that led from his cave. His golden thigh throbbed, but whether from simple exertion, in warning of some evil to come, or in memory of Eurythoe's delicate touch, the savant could not say.

The Nessus was bridged by but a single structure. Although it was too distant to be quite sure, it looked as if the dregs of Tarentum might be massing there. His enemies. To avoid the brutal herd, Pythagoras would need to cross the river Nessus on his own. Although there was no convenient ford, he had no fears about traversing the flood.

On the weedy banks of the river, well upstream of the bridge, half-concealed amidst some fragrant bushes, Pythagoras halted. Summoning up the Braided Worm's number of the river, poisoning the form in his mind, the philosopher dangled his hand into the water.

At his touch, a pair of liquid lips big as a man's body cohered on the surface of the gurgling waters, like bus-relied on an Assyrian temple. "Greetings, Pythagoras!" said the Nessus, its voice like a pair of fish slapped together. "You have not visited in too long. Shall we resume our discussion of Atlantis?"

"Haven't time now, my friend. Enemies are near. Can you bear me safely across your width?"

"Gladly. Indeed, I can carry you dry for as long a distance as you like."

Pythagoras thought for a moment. "Very well, then, bear me downstream past the furthest limits of Tarentum."

"Stop atop my flow."

Continually keeping the River Number in his mind, Pythagoras walked out across the top of the river and seated himself cross-legged upon the surface in midstream.

The water felt smooth and cool beneath him, a bit like a leather cushion to the touch. The current swept him downstream toward the bridge.

Yes, just as he'd feared, a motley mob of the ignorant were gathered there, with Glaucus and Pemptus at their head. Armed with sickles, slings, pitchforks, and the occasional sword, the citizens watched gawking and gape-mouthed as the reviled philosopher surged toward them. But now Glaucus gave a high cry and the attack began. A stone splashed into the water but one cubit from Pythagoras's chest, then another, and then a spear.

Without losing his focus upon the River Number, Pythagoras moved another of his power-numbers into a fresh part of his mind. It was a Cloud Number, the gift of the Swarm of Eyes. He invoked the vast, inchoate magnitude, and was instantly enveloped in a great bank of impenetrable fog. Thus cloaked from view, he got to his feet and walked to a new position upon Nessus's rushing stream. Cries of fear and anger sounded from above and missiles splashed into the river at random.

Nessus bore Pythagoras onward, hastening toward the sea. As the river and the philosopher traveled along, they discoursed. "Searching your mind, I see an interesting maxim ascribed to the philosopher Heraclitus," said Nessus. "No man steps in the same river twice. But is not my form always the same? Do I not ever respond to the same number?"

"Yes, your essential form remains the same," answered Pythagoras. "But, as a river, your watery substance is ever-changing. Heraclitus's teaching has a subtler and more esoteric meaning as well. A man is like a river in that his substance also changes from day to day, not so rapidly as a river's, but just as ineluctably. One could even say *No man kicks the same stone twice*. The stone may be fully the same, but the man is not the same, nor is the man-kicking stone. For a man, as for a river, all is flow. May I ask you a question now, Nessus?"

"Verily you may," said the great watery lips that rode the surface at Pythagoras's side.

"Last night I received the knowledge of a number from the Crooked Beetle," said Pythagoras. "The Beetle said this was the last of these magical magnitudes that I shall learn. If I hold it up in my mind can you study it and tell me it's meaning? I need to know how to use it. I feel I will need every arrow in my quiver for the trials to come."

Just then the river narrowed and entered a steep gorge. For the time, all philosophical enquiry was set aside in the necessity to bear Pythagoras intact past splintered branches and jagged stones. By the time they reached the calm pool beyond the final cataract, both Pythagoras and Nessus's powers had flagged. Pythagoras settled down through the water's surface to find himself standing knee-deep upon a spit of sand. It was dusk.

"Your new number is a mystery to me, O Pythagoras," said Nessus softly. His lips were as tiny ripples. "Good luck unriddling it. I leave you here. And when you step in me again, though we are different, may our friendship be the same."

"Give my regards to King Poseidon of the sea."

"I am with him even now, as am I also with Zeus in the springs of the highest hills. It's a pity you know not the number of the Ocean. Poseidon could do much to help you."

"I daresay I'm out of Tarentum's reach already," said Pythagoras confidently. "I can settle into the next comfortable cave I find."

It was growing dark quickly. Pythagoras found himself shelter beneath a thicket and used the Tangled Tree's handy Sheepskin Number to make himself a comfortable bed. He lay there, nibbling bread and cheese from his wallet, wondering if Eurythoe were safe. Perhaps she could still visit him once he'd resettled. Presently he fell asleep.

Tonight it was the Braided Worm who addressed Pythagoras in his *apeiron* dreams. Fearfully bright, the Worm had but a few strands, surely no more than five, but these were, as always, too oddly linked to enumerate. The braid ended in a flat head at one end, with three bright eyes and a fanged mouth.

"Why haven't you started teaching of us yet, Pythagoras?" demanded the indeterminate Worm. "Why keep spreading the wishful lie that whole, finite numbers are the substance of all things? Aren't you grateful for what the *apeiron* has done for you? My River Number saved your life today."

"Yes, and it was your friend the Beetle who spoiled my leg during your very first visit, you unclean thing," muttered Pythagoras.

"It is thanks to the adamantite gold of your thigh that you have the mind-power to understand numbers which approximate the unbounded essences of true things," said the Braided Worm. "The thigh is, one might say, the wax and feather wing upon which you soar."

"But like any such a wing, it can melt," whispered the Tangled Tree, which seemed to have replaced the thicket beneath which Pythagoras had dozed down. The Tangled Tree curved up through several levels of simple branchings, but at less than a man's height above the ground, it split into a disordered glibberish of uncourteous forkings followed by yet more layers of endlessly ramifying twigs. The Tree's voice was a woolly drone, with a barred edge to it. "Remember the tale of Icarus," said the Tangled Tree. "He flew too near the Sun."

Now there was a crashing noise and the Crooked Beetle forced his twittering mandibles through the chasm of the Tangled Tree. "My companions are too gentle with you Pythagoras. Know you this: Before the sun sets twice, your flesh will die. Speak well of us while you have time, for the new number I gave you will save you from utter annihilation."

The crashing of the Tangled Tree's twigs grew louder, and now the grinning Bristle Cat and the Swarm of Eyes appeared, pressing toward Pythagoras, the Bristle Cat performing its unsettling trick of turning itself inside out, changing smoothly from spiky fur to a pink wet flesh that no human should ever have to see. The Swarm of Eyes moved like a cloud of gnats or flies, with each wheeling member of the Swarm a tiny bright Eye. Yet whenever Pythagoras stared very closely at one of the dancing Eyes, the Eye dissolved into a smaller

GEDLY FORMED CREATURES HAUNTING HIS NIGHTLY DREAMS.

Swarm of smaller Eyes who were perhaps still smaller Swarms themselves—there was nothing solid at all in the Swarms and no end to its divisions, the Swarm of Eyes was *apeiron* in the very highest degree.

"Praise us before you die," chorused the five terrible forms. "And we will save you with the Beetle's number." The Crooked Beetle gave Pythagoras an admonishing nip, and now the terrified philosopher woke up gasping. Horribly, the crashing of brush continued. It was early dawn, with mist rising up from the pool of the river nearby. More crashing and heavy breath. A growl, *Lions?* No, worse, it was dogs, followed by the railing tenor voice of King Glaucus.

"Keep a good lookout, citizens! The dogs smell something. I'll wager the old goat is bedded down here."

Desperately Pythagoras invoked the Cloud Number given him by the Swarm of Eyes. This added greatly to the mist that filled this little glen, but the new dampness seemed only to heighten the sensitivity of the dogs' noses. By the time Pythagoras could fully get to his feet, the hounds were upon him, baying and slavering as if the great philosopher were a cornered fox. The men's rough, ignorant hands bound him at wrists and ankles.

The trial before the Senate and the priests of Apollo took place in the town forum that very afternoon. Pythagoras's announced crimes were sedition and blasphemy—and not adultery, for Glaucus had no wish to publicly wear the cuckold's horns. The charges averred that Pythagoras was teaching things contrary to the beliefs that underlay the established orders of heaven and earth.

"Do you deny that King Glaucus's power is divinely ordained?" demanded Pemptus, his fish-lipped mouth a self-righteous ellipse.

"Of course I deny it," said Pythagoras. "There is nothing more absurd than an aging tyrant." The only one who dared to cheer this remark was Alcibedes, standing well back in the crowd, one hand on his sword.

"And do you teach that all things are numbers and that mathematizing mortals may hope to comprehend the divine workings of the world?" asked the head priest, a bullying butcher named Turnus.

"This is what I have ever been teaching. But—"

Pythagoras's followers were there in a mass, and now Archytas rose to his feet. "Father Glaucus, may I speak?"

Glaucus shook his head, but when Eurythoe, at his side, gave him a sharp elbow in the ribs he sighed, "Yes, my son."

"If it be a crime to believe that numbers are all things, then execute me and these other young savants with our wise, though imperfect, teacher. All of us follow his noble precept that to understand numbers is to understand all things. Be this capital blasphemy, Glaucus, then your son too must die. Rather than persecuting the pursuit of truth, O Father, why not let Pythagoras go into exile? And we adepts of his secret teachings will be free to follow along."

The priests and senators conferred. Eager not to sow further dissension among the polis, they soon approved this notion of exile for Pythagoras and his band.

"Very well then, let them travel away and start a new colony," intoned Glaucus. He, for one, would be happy to have his young and vigorous heir far from the scene.

Thinking this to be the salvation the Crooked Beetle had promised him, Pythagoras now felt impelled to honor the requests of his *apeiron* helpers. He stood and raised his hands for silence. "Good people, I have indeed been teaching for many a year that all things are a play of little numbers. I have taught that God is 1, Man is 2, Woman is 3, Justice is 4, and Marriage is 5. And all my followers know that numbers embody solid shapes as well. Consider how subtly a mere eight vertices can limn a cube. My researches have revealed that there five and only five regular solids to be formed by small dot patterns, and it has been my teaching that these solids form the essences of all material things." There was an approving murmur of excitement. Archytas looked startled and pleased, and even the hard-faced Alcibedes allowed himself a smile. The Master was finally sharing his noble truths with all! Even the thick-headed priests of Apollo seemed

intrigued by the great precepts. Pythagoras paused till silence returned, then continued.

"Yes, I have taught that Earth is the cube, Air is the octahedron, Fire the tetrahedron, Water the icosahedron, and the Cosmos the dodecahedron. Well and good." Pythagoras drew a deep breath and gathered the courage to continue. "But now I must tell you that these teachings are nursery rhymes, childish fables, the food pratings of an old fool. The *apeiron* runs in and out of every earthly object, and, in my little ones, the infinite even inhabits our minds." A furious hubbub threatened to drown him out. Pythagoras raised his voice to a shriek. "Everything is crooked, irrational, unlimited, *apeiron*—"

Loudest among the voices was Archytas. "Pythagoras has gone mad!"

"Kill him!" cried the crowd.

"No!" screamed Eurythoe, but Pythagoras had no firm defenders other than this single, fair voice.

"He will die on the morrow!" rang Glaucus's fruity tones.

"Behold what the *apeiron* can do!" screamed Pythagoras in desperation.

He invoked his four familiar power-numbers to make a mound of Sheepskins, to set them reekingly on Fire and burn off the bonds that held him, to shroud the forum in a Cloud, and to call the River to overflow its banks and rush into the streets of Tarentum. He'd expected to use the confusion to escape, and until he found himself pinned in the arms of Pemptus and Turnus, he thought perhaps he'd succeeded. But the confusion in the forum eventually abated, and he was once more a captive on display.

"Look at him, Eurythoe and Archytas," called Pemptus, tightening a rope around Pythagoras's neck. "Look at the dirty old goat. We'll put him under a door and crush him tomorrow. Each of us will add a stone. And I'll see to it there's no shirking."

"Well said," chorled Glaucus, appearing through the smoke and fog.

Archytas drew close. "Have you then become a sorcerer, O Master? Only to belabour the noble truths of mathematics? Nevertheless, I shall spread your earlier teachings."

"And what if my power is such that your fool of a father is unable to kill me?" demanded Pythagoras. "What then, Archytas? I have certain assurances from my *apeiron* familiars that—dust—"

"That what?"

"O, Pythagoras," cried Eurythoe, her voice breaking. "Where has your madness brought you?"

Pythagoras spent a sleepless night penned in a dusty boulder-walled granary. His thoughts during the night were not of death but rather of mathematics. He felt he was about to die with something great left undone.

Pythagoras was proud of his analysis of the five regular polyhedra, eternally grateful to the One for his discovery of his noble theorem about the right triangle, and well-pleased with the philosophical frills and furbelows he'd embroidered around the properties of the smaller numbers. But something was still missing, some key consequence of his theorem of the right triangle—and he couldn't quite pin down what it was. It had, he was sure, something to do with the *apeiron*, for surely this was the reason why God had sent the mentees to him. During the very wee hours of the morn, he became absorbed in contemplating the nature of the ratio between the diagonal and the side of a square. He sat lost in thought till the crowing of the cock.

Wakeful as he was all that night, Pythagoras remained unmoved by any of the warped denizens of the *apeiron*. But, wait, at the exact moment when the pompous Pemptus came to lead him away to his doom he thought to detect, impossibly, the perpetually leering face of the Bristle Cat peering at him from a shadowy corner of the store-room. The fearsome feline features, composed of a myriad thorny projections, appeared to wink at Pythagoras, who stopped dead in his tracks.

THE BEETLE GAVE A MODULATED BUZZ, AND PYTHAGORAS

"Superstitious about a grinary cat?" laughed Pemptus. "Crazy dreamer. Better to worry about something real—something like a rock." Pemptus kicked at a loose stone the size of a melon. "Bring this along for me, would you, Pythagoras? It can be the first one placed upon your door."

Pythagoras hesitated and the cat—seemingly a real cat after all—ran across his path and out the door. But how complex and richly structured the beast was, how subtle were its motions. And just as it passed from his sight, the cat seemed to perform the Bristle Cat's loathsome trick of turning itself inside out—but surely this was impossible.

"Carry the rock, you," grated Pemptus's muscular centurion.

Pythagoras kept his head high and his gaze level as he was led through Tarentum, ignoring the jeering crowd. A large open-air altar of slate, already warm from the rising Sun's embrace, awaited the hapless body of the old philosopher. Thrown on his back onto this unyielding pallet, Pythagoras sought to compose his mind while a wooden door was laid upon him. Glaucus himself set the first of the stones onto Pythagoras's chest, the very stone which Pemptus had forced him to carry. The door pressed down as if Pythagoras were the pan of some insensate scale, or the conclusion of a sum whose components were the killing weights.

The citizens pressed forward, each carrying a stone, a few of them leaning close to hiss curses of execration, but surprisingly many whispering words of comfort. The rebellious Alcibedus was missing from the line of citizens, but Eurythoë and Archytas were there, forced forward by a soldier with a drawn sword. Their stones were no larger than hens' eggs, yet they of all the weights felt the heaviest of all.

Breathing was quickly becoming an impossible task for the old man's frail chest. Letting the air out was easy, but drawing the air back in—ah, there was the bring-down, there was the drag. The Sun blazed in Pythagoras's eyes and a buzzing filled his ears. Something shiny came at him—a fat beetle, landing on his chin. The citizens fied by, still placing their rocks. The omen of a glistening insect upon the tortured man's face was so inauspicious that each of them felt impelled to look away.

The beetle gave a modulated buzz, and Pythagoras let himself imagine he could hear it as words. "Use the number I gave you, fool," the beetle seemed to say. "Focus!"

Another stone descended, followed by yet another, and that one by a third and fourth. Pythagoras felt his ribs compress and snap, pain flooding him like liquor from Hades. Into his blood-buzzing ears came the noises from the crowd of watchers: taunts and shouts and a lone female sob.

"Enough now," yodeled Glaucus, who'd been closely watching the torture from one side. "The man is broken. Remove the rocks. You three slaves over there, carry him to the riverside midden to expire. It will be fitting for Pythagoras to exhale his soul into the fumes of human waste. That should be *apeiron* enough for him." Glaucus raised his voice to a yet higher pitch. "Let this be a warning to any who would challenge my might! I am as a god, and all must bow down before me."

Far from prostrating themselves, the citizens simply stared at Glaucus. This unpleasant execution seemed to be doing the King's popularity no good. And many were the hands that reached out to remove the rocks and the door from Pythagoras.

When the weight went away, Pythagoras's punctured lungs snatched whistling breaths of sweet air. At some far remove he witnessed himself lying uncovered in the forum, saw the weeping Eurythoë and Archytas bid him farewell, and saw his bloody form tossed onto a rude cart and trundled through the streets by three slaves. He was beyond pain now, well into the tunnel to the Elysium. He was ready for the end.

Yet his progress into the final ecstasy kept being thwarted by something ripping at him, buzzing, tickling. Either it was the bug

upon his face, or it was a vision of the Crooked Beetle. At this point inside and outside were the same.

"You did well to speak for us, Pythagoras," said the bug or the Beetle. "You are a worthy man. Now use my number."

"Hhhhhhh," came Pythagoras's faint sigh.

Emerging from within the Crooked Beetle's very mandibles, the Bristle Cat said, "We can't tell you what the number means, because if you don't know it yourself you don't know yourself to know now. Contrariwise if I tell you to know there's no you knowing, you know?" The Beetle pinched irritably at the smirking Cat, but the protean beast drew its head down into its body, sending a comensurately sized pink bulge out from its rear.

The shock of Pythagoras's body landing in the dump caused his eyes to flicker open. He was fully anesthetized and paralyzed by his body's collapse. His filmed eyes stared dully upward. The slaves who had brought his corpse thither walked away, laughing at the lot of the only citizen worse off than themselves.

Pythagoras tried to inventory his pitiful condition. He lay beneath a dead tree of bare polished wood beside a sparkling fifth-choked rivulet worming through the dump. A swarm of glistening flies buzzed around his chest wounds, tasting of the fresh blood. And there was a beetle crawling on his nose; from the corner of one eye he could see it. A tufted yellow cat came ambling up, leaning over to taste, like the flies, of his hot, sticky blood.

His vision grew fainter; his heartbeat as weakly and erratically as an infant drummer; his lungs drew in only the most shallow of painful draughts; his broken bones jabbed like a thousand daggers. From these incredible wounds, he would never heal. This was the end.

Pythagoras could feel his densely cultivated mind beginning to disintegrate. Strange, to imagine that such a unique individual as himself could disappear, that a being composed of such hard-won constituents could simply dissolve. His golden thigh began to throb then, as if to remind him of all the ways he differed from other mortals. Focusing on that preternatural portion of himself, Pythagoras was reminded of the great magical numbers that this memory enhancement enabled him to store. The numbers for Sheepskin, River, Fire, Cloud and—

A great revelation struck the dying philosopher with titanic force. The fifth number-form represented the quintessence of Pythagoras. Of course! Summoning all his vaulted powers of concentration and willpower, Pythagoras took mental control of the fifth number, then projected it outward from inside his dying self with explosive force—

He had a moment of dual vision. On the one hand he was dying, moving forward through a tunnel toward an all-encompassing white light. On the other hand, he was standing in the dump, looking down at the tormented form of poor old man.

Pythagoras held up a vigorous, apparently normal arm before his eyes, and laughed heartily. Triumph, even over death! Such were the godly rewards of his brave explorations of the *apeiron*. He took a deep breath into easily working lungs, then swung a fist to thump himself on his chest.

Much to Pythagoras's alarm and surprise, his fist merged with his torso like the obscene bodily involutions of the Bristle Cat! At that moment, a familiar voice rang out. It was an apparition of the Crooked Beetle, floating as a large dusky ghost above the physical beetle that was still perched upon his old body's face.

"Hail, Pythagoras!" twittered the Beetle, seemingly in ecstasy over the philosopher's new body. "Welcome to life as a pure mathematical form! I encrypted you rather nicely, don't you think? I did the basic encoding that night I first bit you. And all along I've been updating the Pythagoras number to include your most recent thoughts.

LET HIMSELF IMAGINE HE COULD HEAR IT AS WORDS.

That's what I was doing sitting on your face just now. Keeping your number right up to the minute. You remember everything, don't you?"

Pythagoras nodded mutely, and pulled his limb from his chest with a queer, unnamable sensation. Ranged around him were also ghostly forms of the Tangled Tree, the Braided Worm, the Bristle Cat, the Swarm of Eyes. Each of them was connected by the finest of tendrils to their earthly instances here in this malodorous dump.

"Your new, numerically defined body still has only a not-quite-life," explained the Beetle. "It's unreal in the same way that your number-conjured flames are but colorful tetrahedra until being boosted into full reality by the presence of the elemental Fire within the kindling wood. Your broken old body—it contains *your* kindling."

Pythagoras looked down at his dying carcass with a feeling of revulsion. It was as uninviting as a soiled, wet dog. "You're not counting me to do that same old mortal coil, are you?"

The Crooked Beetle spat, not a number this time, but a viscous dark glob that landed on Pythagoras's foot with a tingling sensation. It was a tiny, crooked copy of the Beetle itself, connected to the ghostly Beetle by another of the thin, silken strands. The new beetle stretched out its wings, waved them tentatively, then buzzed into the air. "I don't like to explain everything," said the great Beetle.

"You need your you to be you," said the smiling Cat, rubbing against Pythagoras's ghostly leg, and then passing right through it. "Be your own son and father."

"Breathe in what you expire," buzzed the Swarm of Eyes. The Braided Worm beside the little brook swayed back and forth like a charmed snake. "Don't fail us, Pythagoras. It still remains for you to prove your greatest result—to prove that we are real."

"So bend down and breathe in your dying breath!" exhorted the Tangled Tree, gesturing with every one of its innumerable branches.

Of course. Now Pythagoras remembered the custom whereby a child would try to breathe in the last breath of a dying parent. His insubstantial body knelt at the side of his supine flesh. With eyes near-blinded by the light of eternity he stared up at his fresh-minted body. With clear, fresh new eyes he stared down at his old self. Now came the dying man's final breath, the expiration, and Pythagoras's number-built new body breathed it in.

From the viewpoint of his old self, Pythagoras felt as if he'd been yanked out of paradise. He felt grief and a kind of homesickness at not fully merging with the divine One whose hem he'd only just begun to touch. From the viewpoint of his new self, Pythagoras felt invigorated, renewed, and—above all—solid and real. And then he was no longer two, but one. The infinitude of his divine soul had now fulfilled the incarnation of the number-model of his body.

Looking around the dump, Pythagoras could no longer see the ghostly images of his *apeiron* friends—and friends they truly were, not rivals or enemies. Their earthly avatars still here upon the midden remained mute: a tree, a worm of water, a cat, a swarm of flies, and a beetle. Pythagoras fully felt how truly these earthly forms did embody the *apeiron*, felt more strongly than ever the undivided divinity that is present within all things, whether great or mean.

His new-made body felt strong and sound, though not overly so. The number form was, after all, only that of an old man. But he was no longer an old man who'd been crushed to death by stones. There was one more change as well. The adamantite gold was gone from his thigh, and looking within himself he saw that he'd lost his knowledge of the five magic numbers. He was glad.

So what to do next? Most important was to see Eurythoë. And the Braided Worm had said something very intriguing about Pythagoras having another great result to prove. Perhaps the simplest would be to go back to his cave, receive visitors as always, and continue to think about mathematics. Surely his resurrection would frighten Glaucus into leaving him alone.

But before doing anything else, Pythagoras tended to his soul's former shell. Gripping the corpse by the shins, Pythagoras bumped it across the slope of the midden and into a patch of trees. He lacked

any shovel to dig with, but he used a stick to scrape out a shallow grave, and then gathered a great heap of brush to decently cover the body. It took a long time, several hours in fact, but what did time matter to a man risen from the dead? While he worked, the rudiments of a new and wonderful theorem began coming to him. It hinged, as he'd suspected, on the ratio of a square's diagonal to its side.

His earlier theorem of the right triangle said that the square on a diagonal is equal to the sum of the squares on the two sides. If the two sides were equal, this meant that the diagonal square was twice the magnitude of each side square. Put differently, a diagonal square and a side square were in proportion two to one. And put differently once again, the ratio of the diagonal to the side could be called the "square root of two."

For or several years now, Pythagoras and his followers had sought for a whole number ratio to represent this curious "square root of two." The search involved looking for squares that were in a perfect two to one ratio; 49 to 25 was close and 100 to 49 was closer, which meant the square root of two was close to the ratio 7/5 and closer to the ratio 10/7. But the match was never quite perfect, and now that he'd finally let the *apeiron* all the way into his heart, Pythagoras fully grasped that the match never would be perfect at all. There was no whole number ratio precisely equal to the square root of two.

He found himself singing a happy tune as he finished up the reverential chores of covering his corpse. Now that he fully understood what he wanted to prove, he would find a way to do it. Mulling over the distinctions between odd and even numbers, Pythagoras set out toward Tarentum. The clever Archytas could help him hone a proper proof.

At the edge of the dump, Pythagoras encountered Eurythoë, her face wet with tears. She was dressed in the black garments of mourning. For him? She didn't really see him, for she was too busy peering past him, looking for his body on the dump.

"Woman, why are you weeping?" said Pythagoras. "Whom do you seek?"

Eurythoë wiped her face with the black cloth of her veil. "Sir, if you have carried him off, tell me where you have laid him, and I will take him away."

Pythagoras spoke her name. "Eurythoë." She turned and fully saw him at last. "Pythagoras!" "My dear, even-souled Eurythoë. The *apeiron* has saved me. Good as new." He chuckled and skipped about, executing a little twirl.

"My dear, odd-brained Pythagoras," sang Eurythoë. "But what of your madness?"

"What madness? Believe this, woman, I'm working on a proof of the reality of the *apeiron*! It all has to do with evens and odds."

"Then I can help you! Let's go up to your cave."

"Right now? What about Glaucus and the priests?"

"Glaucus is dead," said Eurythoë, seemingly not overly saddened by having to deliver this news. "Alcibiades slew him only minutes after they carted your body away. My son Archytas is the new king, and the populace rejoices. The priests of Apollo will do as Archytas says. We already have Turnus's abject assurances." She burst out laughing. "Glaucus is the official reason why I'm wearing mourning. But, O Pythagoras, it was only for you."

"I should speak to Archytas," said Pythagoras. "About the wonderful new proof."

"We'll do that later," said Eurythoë, kissing him. "After the cave. I want to give you a proper welcome."

"Very well then," said Pythagoras. "Let's take the bridge across the river."

"No more sorcery?" said Eurythoë.

"No," said Pythagoras. "Just mathematics." □

BELOW: Bob Eggleton's cover to Scott Gier's *Genellan Dragons*, his second book about the colonization of a beautiful but hostile planet.



Artist Bob Eggleton is allergic to reality,

and all of Science Fiction

is the richer for it.

PIGMENTS OF HIS IMAGINATION

BY KAREN HABER

QUESTION:

What separates movie queen Sharon Stone and movie monster Godzilla by six degrees?

Answer: Would you believe it's Bob Eggleton?

The artist's enthusiasm for the Big-Lizard-That-Ate-Tokyo is well known to his many fans. And Eggleton did work on some tie-in products for the *Godzilla* movie. But what his fans may not know is that Eggleton also worked on astronomical special effects for the Science Fiction film *Sphere*, starring Sharon Stone. Small galaxy, isn't it?

What else has Eggleton been up to over the past five years since we last focused a *Science Fiction Age* Gallery on his career? Nothing much. He picked up a few Hugo Awards, contributed conceptualizations to the Las Vegas thrill ride "Star Trek: The Experience," climbed sheer cliff faces in Australia and flew over active volcanoes in Hawaii. He wrote and drew comic books, illustrated children's books, and painted covers for science magazines, and Science Fiction and Fantasy publishers. In other words, it was business as usual.

"I think sometimes people take themselves way too seriously," says Eggleton. "Science Fiction is entertainment. It's fun. If it's not fun then you're doing it wrong."

There's no danger of the famously long-maned, goateed artist taking himself—or anything else—too seriously. After all, this is a guy who empathizes with the monsters in Horror movies.



ABOVE: Eggleton wanted the ship on the cover of Vernor Vinge's *A Deepness in the Sky* to resemble the Holy Grail. RIGHT: The cover to Larry Niven's *Rainbow Mars* evokes memories of Burroughs and Bradbury. OPPOSITE ABOVE: An early concept painting done for the SF film *Sphere*.

"I just love Godzilla and his ilk. I identify with them. Monsters are always so out of place. They're big, and the city's in the way, and they really don't mean to smash it. They're just somebody from out of town looking for a little time off. I can relate."

As for the *Godzilla* movie, although Eggleton loves all things Godzillian, he admits that he enjoyed the hype more than the actual film. "My main gripe—like most *Godzilla* fans everywhere—was that *Godzilla* does not run from tanks, big guns, etc. He just smashes right over them. Also, the CGI-generated *Godzilla* was good, but would have looked better if

Jurassic Park hadn't done the same thing five years earlier."

Eggleton's life was changed by a close encounter with monsters: Of course, he was just a little boy, and these were extremely big lizards. "At the 1964 World's Fair, I got to sit on one of these giant dinosaurs they had built, and to this day I can still remember that vividly. They were the most thrilling things I'd ever seen in my life. From that moment on I always had an incredible affection for dinosaurs. And then I discovered *Famous Monsters of Filmland*. That was it for me. My fate was sealed."

His parents not only bowed to the inevitable, they aided and abetted their son's artistic interests. His father, an inventor who helped develop the process that sticks Teflon to metal, introduced him to the original *Star Trek*, and his mother cheered him on from an early age. "My mother always made sure I went to art classes. Both of my parents were tremendously supportive, even if they were cautious. They let me know that it was OK to be an artist. A lot of people never had that support. I'm really grateful."

Despite Eggleton's love of the Science Fictional and Fantastic, his paintings of imaginary places and things are rooted in



reality. If you look closely at an Eggleton painting, you'll notice that he manages what seems to be nearly impossible—to create dreamlike scenes by means of exacting, detailed realism. His colors manage to be both hallucinatory and believable.

For example in *Genesis Dragons* (by Scott Geir), the artist indulges his love of landscape painting in an homage to artist Thomas Moran—and the American West—seen in the color-drenched mountain in the background. Similarly, his cover for *Rainbow Mars* (Larry Niven, TOR) was inspired by the red rocks of Sedona, Arizona.

"It's important for artists to get out and see the world around them, to understand the natural world. I do painting by the ocean and landscape work where I paint in a style completely different from my Science Fiction work just for the challenge.

"The more you understand the natural



world the more fantastic you can make the supernatural world. Form will follow function regardless of whatever planet you're on in the galaxy."

Eggleton says that he goes into a trance-like state when he's working. "Once I've got the concept figured out, I can just paint away and talk to people—it's like being on automatic. Things happen—happy little accidents." While working, the artist keeps his left brain distracted by music—1970's pop-rock group Abba is a favorite—or videotapes of movies. "Some artists can't take any noise, not even music. But often, when doing a very detailed piece, I'll put in a movie so I can sort of half-watch it. Usually it has to be something like the James Bond films, something I have seen over and over, so my left brain basically goes into autopilot while my right brain works."

Fans will get a chance to observe Eggleton's artistic process up close at the

IF YOU LOOK CLOSELY AT AN EGGLETON PAINTING, YOU'LL NOTICE THAT HE MANAGES WHAT SEEMS TO BE NEARLY IMPOSSIBLE—TO CREATE DREAMLIKE SCENES BY MEANS OF EXACTING, DETAILED REALISM.





ABOVE: Eggleton created a monster of a painting with *Gorgzillicus*. OPPOSITE: "O Pioneer" portrays the eastern coast of Australia. BELOW: The artist brings *The Spirit of Science Fiction* alive.

Chicago World Science Fiction Convention in 2000, when Eggleton will be Artist Guest of Honor. He's planning to set up his easel (but not his VCR) in the lobby of the main hotel and produce a painting in one day. As he works, fans will be able to ask questions, kibitz, and check on the painting's progress.

"I think it's very important for writers and

artists to be accessible to the people who like their work. It really is the fans who make it all possible. And I love their feedback—I need it. Artists and writers, whether they admit it or not, are the biggest approval-seekers in the universe."

Eggleton's fans got a chance to see him in action—literally—when he won his first Hugo in 1994 in Winnipeg, although he was a little late for his own celebration. The artist didn't attend the convention, but upon being notified that he had won, he hopped the first plane he could get out of Rhode Island.

"I was sitting at home, down in the dumps, thinking 'I could be at a party at the convention right now!' when I got the call about the Hugo. My knees just crumbled. I drove down to my parent's house, woke them up, and at about one in the morning I got on the phone to the airlines and said, 'I have to get to Canada.' Three airports later I walked into the convention. And I've got the only art badge with 'Hugo Winner' handwritten on it, to prove it. The fans represented my Hugo to me at the masquerade. I was awake for 24 hours straight, and somehow I managed to stay coherent most of that time. It was incredible."

Eggleton went on to win more Hugos in 1996, 1997, and 1998. He has received eight Chesley Awards, the NESFA Skylark Award, and readers' awards for covers from *Analog* and *Astounding* magazines. *Alien Horizons: The Fantastic Art of Bob Eggleton* (1995) with Nigel Suckling was a Science Fiction Book Club bestseller. *The Book of Sea Monsters* (1988), also with Nigel Suckling, was an homage to Eggleton's artistic hero, J.M.W. Turner. It's now in its second printing through the SFBC.

In March 2000 fans can expect a new Eggleton book, *Greetings From Earth*, to hit the stands. The artist says it will reveal more of his creative process and show personal paintings never seen before.

Also upcoming is an illustrated leather-bound edition of Anne Rice's *Interview With the Vampire*. Eggleton will not only create all the illustrations but also model for



"SOMETIMES IT JUST SEEMS TO PAINT ITSELF. YOU STEP BACK AND SAY, 'WOW, I DIDN'T EXPECT THAT TO HAPPEN.'"

Lestat. "After all," he says, "I'm the cheapest model around." He often uses himself in his work. "Especially if it's a humorous painting, I can involve myself a lot."

One of his favorite recent paintings is for *Forge of the Elders*, (L. Neal Smith, Baen Books). "It's just me sitting there, having a beer with a giant mollusk."

Another painting he's excited about is *The Spirit of Science Fiction*, an homage to old-time SF. I like the way things were supposed to look. Take Chesley Bonestell, who was a wonderful astronomical artist and great painter. For my money, his vision of the Moon is the way way the Moon should really look, not like some sort of golf course blasted by acid. And I wish NASA would let its hardware and spacesuits be designed by artists instead of scientists."

In keeping with Eggleton's romantic urges, he's now applying taking a looser, more painterly approach to Science Fiction work like *Deepness in the Sky* (Vernor Vine, Tor). "I did a spaceship for that cover that I wanted to look like the Holy Grail. And I definitely kept [J.M.W.] Turner in mind the entire time I was painting."

He thinks of himself as a romantic painter. "Romance and believability are what's important. The scientific content should never draw too much overt attention to itself."

Eggleton believes in the sense of wonder that Science Fiction engenders and tries to keep himself constantly open to its possibilities. He claims to work with color instinctively. "Sometimes it just seems to paint itself. You step back and say, 'Wow, I didn't expect that to happen.'"

He doesn't use digital art although he enjoys the work of artists like Rick Berry. "The problem I have with computer stuff is



it's very unartistic to get set up to do it. By the time you're ready, you forgot why you went there to begin with. And I think it can get in the way of your drawing skills."

A master of airbrush and astronomical subject matter, Eggleton uses transparent color and powerful contrast to create vivid extraterrestrial scenes. When the artistic force is with him, Eggleton says he can paint six paintings in six weeks. "When I'm on a roll I can do a painting in about a week, furiously working."

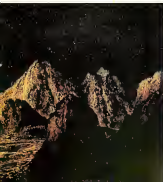
The paintings all begin with an image and

an idea. "As soon as the concept comes to me I try to get it down quickly with Sharpie markers. It's the hardest moment to get started, facing that white canvas and knowing that somewhere within it exists the potential for magic. Facing that white canvas each time is the hardest thing."

If it's so difficult, why does he do it, time after time?

"I think I'm allergic to reality."

(Fans interested in seeing more of Bob Eggleton's work should check the Web site www.novaspace.com) □



... and they ran together and flung
their arms around each other's necks, and
asked for nothing better than to be rolled
into one."

—Aristophanes, in Plato's Symposium

Love makes the
world go round, or
so the experts say.
In the odd little
town of Redgunk,
Mississippi, it even
affects worlds
other than our own.

BY WILLIAM R. EAKIN

ILLUSTRATION BY JOEL NAPRSTEK

plain female seeks nice guy

1. There aren't many single men in Redgunk, Mississippi; plenty of married ones glad for you to sit on their laps down in front of Uncle Joe's Corner Liquor Store and Gas, now featuring Small Engine Repair. And some of those guys from the football team, still down at the Consolidated Schools, are quite used to renting stacks of movies from the back room of Mabel Delashmit's Video-Rental & Pizzeria, and, on their big date nights, taking them down to the Kirch Motel, one of the county's more romantic places, over on County Road 63. The Redgunk romance game hits its height when you drop your tailgate and sit with your paper-bagged Jack Daniels, out on the strip or down in the parking lot of Burly Bob's Bar and Grill. A lot of the guys cruising up and down the road making lewd gestures are in their 40s and 50s, but the girls are usually 14, so Mina felt she might have outgrown that scene, finally, now that she'd come back from the big medical school over in Memphis. Much to the hormonally demented male population's chagrin, she wanted something more.



Joël F. Namaste
1994

So Mina tried her first personal ad ever, writing it on her 27th birthday, the one she celebrated alone with wine and tears at the midnight table, listening to the whip-poor-wills and the hawking of the crows in labor down in Bess Wewer's lower pasture. She wondered why the hell she'd ever agreed to a rural practice, in her own hometown, no less, being single and alone at that, then wrote: "Female Doctor, relatively attractive, seeks nice male companion for friendship only. Likes to swim, fish, and bowl." The ad came out with the "L" in the last word appearing before the "O." That's the *Felpham Gazette* for you, spelling and careful transcription being considered rare skills among the staff. Appropriate humor, too.

She had them change the ad after every Boy Howdy in the county started circumambulating the town, like dogs, looking for her address, and after the one big date materialized, and thankfully, deconstructed: the one with the guy who came down from Blue Falls calling himself Joe Danger, ex-Marine junkie beat poet with bleeding knife tattoos and a Harley chopped hog. "Silver putrid cityscapes running wild with the crazed Enkoloid of insanity; eating twisted brains like apes of crystal-steel and glass." His first words to her: For that, she could have moved to Seattle.

So she tried correcting the ad, this time submitting: "Plain female seeks nice guy." Period. She wanted to say, "And I have a full head of red hair that runs down my back; I have a gentle and sensitive nature, here in the middle of the country, with the dogs circling. With the right kind of man, I could give a good shoulder massage and sing lullabies and walk beneath the stars and make gentle sweet love; I could pick him up out of the blues with just a smile, even if mine is a little crooked. I am an intelligent woman, a medical doctor, who did well in medical training, and I am looking for a man who can see the gentle sparkling of my mind before he sees the body, see and love in me the little bit of humor." With the right kind of man not like Bobby Joe Raymond Thorton. "I am a gourmet cook; not very good at fried potatoes and ground beef, but look for the saffron-subtle tastes of a cheese pastry, or even a little seafood—and I once bowled a 300 game." All of that was true, but such a lengthy ad would have had enough typos for the tastes of every underground pervert this side of the Mississippi. So she wrote simply: "Plain female seeks nice guy."

Finally a call came from the *Felpham Gazette*, with a phone number, local. She dialed it, her hands trembling a little on the receiver, and asked for: "Anson Bradley?" Funny she'd never heard of a name like that in Redgunk, Mississippi, but someone should have, with Redgunk having a population of only 254, plus the dogs, skunks, opossum, and nastrony cows. "Can you tell me about yourself, Mr. Bradley? You from this area?"

"I'm a nice guy. And I know you've been looking for niceness. I am an alien, of course."

"Hlegat?" Old joke. Her friend Lucy had always said she told bad jokes or resorted to platitudes to hide her insecurities. Funny how a woman could look death in the face, in the ER, keeping a steady hand, yet not be able to talk to a man without an added sharpness in her voice. "Or do you mean the science fiction sort?" She didn't have much patience after that boy from Blue Falls. "Girl gets boy through the personals, finds out he's an alien from Arcturus, he eats her. Typical."

"Without the meal."

She hung up. After dinner, she called again. "Okay, so what's with the *Outer Limits* stuff?"

"I'm an alien. For real."

"Why would you tell someone that if you really were?"

"I would certainly have no reason to say it if it wasn't true, would I?" She repeated the sentence to herself several times to make sure she

got the logic of it. "You were screened by the Personals Department, right? They said they would screen for real whackos." This time.

"I didn't tell them the alien part."

"But you tell me right off? Great. Thanks."

"It's just none of their business, and they probably wouldn't believe me. It's your business—assuming we have a date."

Assuming a date—

"When you assume you make an ass out of—never mind."

"I know. What will we really make out of you and me, Mina, when we are honest and gentle with each other?" Nice voice. Maybe even promising. Certainly as much as Billy Delshunt, who also thought he was an alien but had always been in Blake County, picking up road

kill for the highway department, or Franklin Putnam, rumored to have rabies.

"Mr. Bradley, assuming I got serious about going out, where would you want to go?"

"Your mother's, for dinner?"

"My—?" What? What a come on, what a façade!

She said, "All right. You're on."

Girl gets boy
through the
personals, finds
out he's an alien
from Arcturus, he
eats her. Typical.

HE WAS MAYBE 30, HAD BLOND HAIR rushing back in a slightly disheveled wave; striking, not-too-sharp features; an immaculate suit with sharp creases in all the right places that moved loosely over a trim musculature. He was what the nurses down at Felpham General would call a "hunk," though intellectual, soft-spoken. No such thing as a suit like that in Redgunk, Mississippi, either. Enough to make her distrust him. Or herself, with him.

"Let me tell you what's what, up front." She pointed a finger at him there and then on the courthouse lawn, with the statue of Confederate Colonel B. Ryan Howdy looking distrustfully downward. "I want no long-term near-marital-type relationships. I haven't had one of those in 10 years, and that first one was just a year living with Bobby Joe Raymond Thorton, which was plenty. That was before I graduated from the Consolidated Schools and got smart about the hormonal and psychiatric structures of human kind in general. And about what I needed to do with my life. Got it?"

"Oh," he nodded, like he didn't get it, and she should have never admitted him into her car, but she did, and she drove toward Mother's.

She said, "So does the fine about being an alien pick you up a lot of women?"

"You're the first." She looked at him sharply, trying to catch that sentence on his lips, to see if it looked like a lie, too; his blue eyes caught hers. They sparkled. They were—lovely. Sparkly, like a Redgunk summer evening, with the frogs singing their transcendent songs into space. This was a lovely man. He had eyes that would knock someone dead, the how-can-they-be-so-innocent-while-simultaneously-sexy-as-hell kind.

She liked them. Too much for a first date.

"Let's just drop the alien talk for a while," he said. "It makes me a little uncomfortable."

"It makes you uncomfortable?"

"Tell me what to expect from your mom."

"My—mom." Ex-con. Owned a boarding house south of town: Mother's. Gun shop in the front; biker beer hall downstairs. "Uhh—Maybe we shouldn't go to Mom's. I'll call her. How about—?"

"How about that?" He pointed and she turned to see exactly what he was thinking. They were driving past Uncle Joe's Bowl-and-Suds World, at the city limit.

"The people at the Personals Department told you I bow?"

"No, ma'am."

"You saw the earlier ad?"

He smiled, a sensuous, good-natured crease across his face: "I just love it, myself."

She did not believe him. She began to get nervous. She looked down at herself. She'd overdressed it with a dress and even some makeup. "We're a little overdressed," she told him.

"We can go back to your place so you can change."

She eyed him suspiciously. "No. As we are."

His eyes caught hers again. She started to melt, had to turn away. Far off in the distance, she could hear those frogs in the swamps, singing at the top of their little throats.

THEY ENTERED THE WORLD OF FLUORESCENT LIGHTING, CLANKING hollow-echoing pipes, and the thick guffawing of the smokers' league. She used the pay phone behind the counter, where Mary Ann Krueger hunkered out bowling shoes.

"Yeah, what do you want?" Mona, her typically maternal tone; whiskey-deep gangster voice. The din of the beer hall behind her.

"It's me, Mona. Not gonna make that dinner after all—" She put off a deluge of questions, and hung up. It was not as if she owed Mona a whole hell of a lot for anything particular. Except maybe giving her lots of hurdles on her way to becoming herself.

She joined Anson, and they rented ill-fitting shoes. They played, he in his wrinkle-free suit, she in a hitched-up dress she hadn't worn for a year, and hose. He moved like an animal beneath his suit, well-toned, with a mathematical precision, as if blue-collar bowling could be made into something the equivalent of chess in motion, or ballet. She felt like something in a puffed tutu. He looked like a statue of Myron's, in clothes, perfectly proportionate to the golden ratios inside Man. She felt like a polyurethane Duane Hanson rendition of a market woman. He hit strike after strike with a professional, balanced hand. She, on the other hand—

Then something happened.

He did something to her, with his presence. She stood in awe of it, feeling the still wind of spirit. She brushed for the first time against something like excellence. Not only in him, but in herself. He should have won, somehow she came out ahead. She'd once bowled a 300, but one could hardly call it a perfect game: that was the universe and all things coming together out of clumsy accident. This game now was the universe coming together with precision. Order. Design.

He didn't just let her win. He drew the innate excellence right up from her gut.

Do you believe a game of rolling some big bulky hulk of a ball down a loud and noisy strip of wood, booze and cigarettes in the air, can in a moment yield excellence of being? That the vulgar world of blind sensation can be, at the same time, a place of pristine mathematics, clarity, and lucidity, crystal like glass? That grotesque toads in the smuck of the phenomenal Redgunk world can for just a moment sing so beautifully that the soul of their music is the soul of a planet, released by their singing to vibrate and live among the stars?

She didn't know if she did. But if souls were mere fantasy, her fantasy was winged and singing, too. It felt like beauty itself

"ANOTHER GAME?" HE SMILED AT HER.

She said, "I'm feeling dizzy. I need to go home. Besides, I have to round at the hospital."

"I'll go with you," he offered. Bad sign. It was going to be hard getting rid of a date who offered to come to work with you. One that made your spirit sing like this. She shook her head.

"Well, okay, then," he said, "how about fishing this weekend?" She hadn't said a gallamned thing about her fishing.

She whipped her face at him and demanded, "How in God's Green Earth did you know I like to fish?" *How in Heaven's name did you make me feel this way?*

He didn't have to say anything about God's Green Earth for her to see the comment in his eyes: *I ain't from here.*

She slapped him across the face. "Cut it out. Right now." She'd never slapped anyone, though Bobby Joe Raymond Thornton once

slapped her, one too many times, before she finally got her act together enough to leave him and Redgunk and Mother's and go on to medical school, which was what she should have done in the first place. She didn't say a word, but walked away. A ball clattered into a near-strike in a nearby lane.

She sat with determination in a plastic chair, ripped off her multi-colored bowling shoes, and, when he tried to follow her back to the counter, she hurled one at him.

"Hey," he said good-naturedly. "I come in peace."

"Look, bub, I don't know what kind of hospital you just crawled out of, but I'm not finding the alien crap very funny or endearing, got it? I know around these parts you hear a lot about this sort of thing, Orange Decker being abducted and made 10 times smarter by aliens from outside the galaxy; Larrin Smith coming home after years of being a Beergorger Rock-and-Roll groupie, only to claim she had an immaculately conceived alien child in her womb; Crawdad Dordad telling his wife Viralene he was coming home at dawn from Barly Bob's Bar and Grill because he got side-tracked into being an experimental subject in some flying saucer laboratory, and had 10 skin scrapings down his back to prove it. But, sir, I must tell you that I have had too much crap in my life from the likes of Bobby Joe Raymond Thornton and the bikers at Mother's and maybe all-rotten-through-and-through Redgunk men, who are all just dogs anyway, to take any more. To take any more of being with anyone else. Alien crap."

What had he done to deserve this? She wasn't sure, herself.

"Do you have a stethoscope on your car?"

"I—what?"

"Let's go get it. Then you'll want to take me when you go to round at the hospital—to verify it."

"To—" They went outside and got the stethoscope.

In an hour she was still frantic, running up and down the halls of Pelpham General, trying to bypass bewildered technicians in an effort to find out why Anson Bradley had no heartbeat, no pulse, and apparently no circulatory system whatsoever. No doubt he was from outside Redgunk, Mississippi. Perhaps—perhaps from outside the known universe. He quietly and patiently indulged her while she panicked and plunged monitors into him and lost most of her ontological commitments, stuck him with needles, and connected him finally to an EKG to see with sheer dismay that he produced some sort of steady electrical emission and nothing else. Like he was pure energy.

"How the hell can you be alive—" She had him behind the locked door of a room in the ICU. There was only the green light of the EKG monitor to see by: His eyes still twinkled, but the light came from his interior.

"Here—" He somehow found a scalpel. He held his wrist up and she watched with a chill as he ran the blade around his wrist. A line of skin split open and a tiny bit of a fluorescent green fluid oozed out. He touched the mucopurulent stuff with his fingertip and said, "Doesn't circulate. Just keeps us moist and turgid, keeps up appearance."

"What are you?"

He straightened and smiled a cool and pleasant and pleasing smile. If she hadn't been so gallamned upset by the whole thing, she would have—well, she was not quite sure what she would have done. He smiled and said, "I am a Personal."

"A Personal," she echoed skeptically.

"I'm your Personal."

"What do you want from me?"

Anson shrugged. "A couple of jurs?"

She looked down at two urine specimen vials that happened to be handy on the nearby prep table; the sterilized glass ones Pelpham General still used, when they ran out of the plastic.

"Those will do," he said calmly. He stood and took them in his hands. He said, "I thought you would want to know what I look like without the fluid. No secrets."

She looked numbly into his face: He'd said this as if he were just a human man, coming clean to his true love, making confession before her with heartfelt honesty and the deep melancholy of having been saved from something, laying out the worst of the before-I-met-you

time in order to clear the way for matrimony or love: "I spent six years as a evening-gowned dancer in Bangkok," or "I once caught a venereal disease known to have crossed over from the equine population," or "My biggest goal in life until I met you was to raise enough money selling dope to buy me some chickens." She braced herself. Whatever he had to reveal, it could not be bad enough to change how she felt about him. "Mr. Bradley, I was kidding about the alien-boy-eats-girl scenario. Were you?"

A tender expression, "Watch." He set the urine jars back on the prep table and withdrew long plastic IV-type tubing from his pocket. He held the end near his nose for a moment and then, without a sound, without a scream or a gasp, without even a tremble in the foundations of the Redgunk world, he plunged the plastic tubing down into the bridge of his nose with a wet *thwunk*. Then, with both hands, he ran it deep into what should have been skull and brain. He looked at her, that tubing sticking out of his head, and said, "Don't be nervous."

"Me—me be nervous?"

He thrust the other end of the tubing into one of the jars. Something viscous started dripping downward, first just a drop or two, then a steady mucous-stream. It was the green fluid. His body began withering. Deflating. Somehow or other, he set a flattened foot into the second jar, and then a leg, as it deflated. A thigh folded over into the jar, followed by pelvis, abdomen, and chest. That ole boy folded down like a vinyl map into that little jar. And he emitted a smell: the smell of dead fish you sometimes pick up out in the swamps behind Redgunk cemetery, or of sewage-processing plants. The scent flushed up and hung heavily in the room. Her eyes smarted, but she did not take them away. In what was less than a moment, she was alone with two urine jars: one full of mucopurulent body fluids; one with the flattened outer epidermis of what had been her date. She was glad she'd decided against going to Mom's.

"So, uh, this is a typical date for you?" She half-expected to hear the gurgle of a response from one of the jars. When there was none, she picked them up and carried them over to the sink: one slight motion and their contents could be gurgling down into the Pelpham sewage system to be disintegrated in the new and technologically advanced B. M. Garvey Menstrual Water Treatment Plant east of town. But she did not pour. Instead, for whatever reason, she removed the IV tubing that now ran jar to jar, and jammed it in her pocket, then fitted lids on the jars and started out the door.

An EMT—Bobby Yocher, who, if you remember, was the ole boy Mattie Stambagh's clam spaghetti put in the hospital after that big pollock down at the First Mount Zion Christian Church of Redgunk and who, during that very same time, was inspired by the intricacies of his own gastric system to enter into the medical profession himself—Bobby Yocher bumped into her as she hurried out. "Why, Doctor?" he started. "Is everything all right?" He looked over her shoulder inquisitively. (Redgunkers are inquisitive by nature, and if someone's being admitted to the Pelpham General, why everyone should and will know it—whether it is Mary Heisenberg sneaking a pregnancy test on her 16-year-old daughter, or Mabel Delahunt getting that operation finally on her pikes—everyone, from the folks snorting whiskey down at Bury Bob's to the Ladies of the Christian Auxiliary, with their little knitting needles going 30 miles an hour, drinking cough syrup, everyone knows everybody's hospital business. Believe me, you can't get a damned vascotomy down there without everybody and his mother helping tie the tie. Front page stuff.)

"What's that—that smell?" Bobby Yocher gasped.

She looked up at him, motioned to the vomitus-looking stuff in that jar at her chest and mumbled a loud, wet, sick-sounding burp: "Just got back from Smorgo-Big, over on the interstate."

"Uh, yeah," he backed up. Feasible story. It had happened to him, too, the day of the big wave, when the potato salad got the food poisoning. He had a history of it. She winked at him, then she and her jars skee-daddled out of ICU down to the car in the hospital parking lot. She peeled out, down the street, up County Road 63 through the countryside, to Redgunk and finally squealed to a stop in front of the

old Victorian, south of the courthouse. Lucy would be very interested in this.

2

DR. LUCY HAMPTON WAS AN IMPORT FROM GEORGIA, USA, TO REDGUNK, Mina's medical school classmate, though she'd signed on in Redgunk only for a tentative year, and spent most of her time indoors, watering her plants and watching with wary eyes the circumambulating motions of Redgunkers in pickup trucks, when she wasn't pulling call, or doing those proctology exams some of the old boys off the strip lined up for.

Mina burst up her stairs and ran through the door without knocking. Lucy looked up from the drem where she was peeling herself out of that new polyester bowling uniform they'd bought for the league.

"Oh, God, Lucy, I've just had one hell of a date—"

"Blind date?"

"It was from the personals—"

Lucy stood and flipped the uniform away. She wore a camisole and boxers. Her face was freckled like a kid's, her features not so lacking in genetic diversity as the rest of Redgunk. A slight Georgian slow motion of torque: "You've had bad experiences with the personal ads before, Mina. Maybe you need a new approach?"

"No, it's different this time."

"Are you gonna need me to call the Sheriff again?"

"No, it's not like that, exactly."

"Sit down, let me get you a beer."

She sat down and motioned, "He's out in the car."

"Oh? Need me to tell him to get lost?" Lucy craned her neck to see out the window, and obviously couldn't see the jars. She could see Mattie Stambagh, looking through her window from across the way. Mattie Stambagh, Worthiest Matron of the Christian Ladies' Auxiliary and the eyes of the neighborhood, peeked through the curtains anytime a car pulled up, just for security. Specially important, around these single young women living in their own houses, by their own gilded selves, knowing what the men of Redgunk are like, and all the other dog-creatures in the world.

"I—just need a moment's rest, to clear my head—to—"

"Take it easy, take a deep breath."

She did. Lucy said: "You know Mary Lou Pritchett, she just had an experience with a man she met through the personals, too—" Pritchett was a nurse of theirs, divorced some three years from a fifth husband. "At first it didn't seem like it was going to work out. Now she won't stop talking about him. In fact, I double-dated with them two nights ago—went to Frank Trimachio's cash place over in Nain—a blind date, with a friend of his. It was good."

"Yeah, but this is different—" She stood, feeling a rush of panic.

"Lucy, come out with me and see him."

"Let me slip on some jeans—" And she left the room. Mina could not wait. She was drawn to the front door, drifted blindly down to the car and stood for a moment staring at the jars through her passenger window.

"You pulled his tubing?" She whipped around to find Lucy looking in over her shoulders. "He, uh, can't reinfuse that way—"

"How—"

"Come on, bring him inside. And meet Werner." Lucy went back in. Baffled, Mina looked up at Mattie Stambagh's window to see that the curtains had just quivered closed. When she'd given the darkness there enough stare to make sure Mattie had gone back to her typing of the poem "Trees" for the program notes of the annual meeting of the Christian Ladies' Auxiliary, Mina took the jars against her bosom and numbly carried them up the steps back inside. On the fireplace mantle were two nice apothecary jars from the gift shop at Graceland, embossed with images of the King, in gold. Not urine samplers. These, too, were half-filled with squasy, liquid substances like those that comprised Arson. Mina sat down in an overstuffed chair in disbelief.

"I really want you to meet Werner," Lucy said. "He's just perfect."

"Can he bow?" Mina stammered.

"Now—but to tell the truth, I'm not much at it, either. I just do it to be with y'all—you and Pritchett and the others. He likes to watch, and I like him to. But he's a skier. I have always felt like I had skiing in me,

and that if I had the right instructor, I could really do well with it. He makes me feel capable, worthwhile, and—" And he never once asked her to do a prostate exam, like all the other Redgunk boys.

"What the hell are they?"

Werner says that some people aren't prepared. Pritchett, for example, couldn't take it; she thinks Bart is just some trucker from South Watchanoke. That's what she's always needed, and she's stoned in love. But Werner said that some of us are ready to know, that the more truth we can take, the better—for us. In actual fact, Mina, to them, we're like—"

"Future slaves."

"—like tissues of predilection, organs ripe for viral invasion, wombs ready to conceive, something wonderful—"

"Viral invasion. There you go."

"Not of our bodies, but of our subconscious and our hearts—"

"Great, they're going straight for the brain."

"No. They start there because—, imagine the ideal mate, the archetypal one you've searched for all your life. Who is it? It ain't Bobby Joe Raymond Thorton, is it sweetie?"

Involuntarily, Mina pictured Anson.

"I can see you've met him."

"But he's in two urine jars."

"The buggy skin and green fluid are from space. But he's also the archetype, the ideal lover straight out of you. That's why they start with the mind, to be perfectly matched."

"Great. My ideal mate is a virus. It's *The Invasion of the Friggin' Body Swatchers*."

"No. It ain't an invasion—"

"What the hell do you call it, then?"

"I call it: Symbiosis 101. I call it: love."

Mina closed her eyes at the word. She could not help seeing that sparkling blue, as if she stood out on the edge of a swamp, the frogs calling and the bugs zipping and nothing but humid comfort in the night, there beneath a spray of stars too vast for comprehension. She basked in the feeling, then caught herself, and opened her eyes with exasperation, disbelief, a streak of terror.

Lucy saw the look and stopped her from speaking. "Let me introduce you to Werner." She reached up and connected the two jars on the mantle with a spare piece of plastic tubing. That B.M. Garvey Memorial fish smell burst out into the room. A sucking noise, and green mucous-like fluid spurt from one jar into the other. Something there began to grow. The jar turned over. The contents plopped to the floor like the afterbirth of one of Bess Wewer's cows. But it convulsed into the shape of a man, more shapely than any man from Redgunk, Mississippi, let me tell you, except for maybe some of those fellows working down on the chain gang to gravel County Road 63, in the northwest corner. His features rose up out of the muck—nose, eyes, chin, elbows, kneecaps, the embarrassing parts—then there he was, a man, fully clothed, too. He wore T-shirt and tennis shorts. Cleaner ones than you can buy new in Redgunk. A beautiful man. Tall, spindly, confident. A man with plastic tubing sticking from his forehead. He reached out for Lucy's hand, and with the other, removed the tubing.

"This—is Werner," said Lucy. Mina wiped a little drool from her lips.

"Hi, ma'am," he said in a Georgian drawl, that was—rather becoming, for these parts.

And Mina saw the summer night in his eyes, too, as if there were in both these men the elements of some deep and soundless song, that, heard for even a moment, could melt your heart and bend space-time and ring like the spring peepers at their highest and best voice, a tune and melody of heart that with just a single real hearing could end all loneliness.

Look, bub, I don't know what kind of hospital you just crawled out of, but I'm not finding the alien crap very funny or endearing, got it?

MINA ROUNDED ON THE LAST of Lucy's patients on Sunday morning. Lucy was off siding with some Mariandemon-ahen-lover or another. Mina's Anson was at home, in separate urine jars that she did not have the courage to connect again with the tubing, though she had had many moments through the night of trembling fingers, touching glass.

She thought through her conversation with Lucy. Lucy had walked her to the car and whispered: "Don't worry. They're lovely. They're not going to hurt you. And besides, Werner's damned good in bed."

"You—you slept with that monster?" she demanded again. Curtains closed across the way.

"I know how you are always so concerned about keeping control. If he's in his jar and you don't want to mess with the man, you just don't connect the tubes. It's the perfect leash. And Paradise. By the way, will you see my

patients this weekend?"

It was their arrangement that Mina would do so when Lucy was out of town. Sunday she wore scrubs, doing just that. She ran into Pritchett. The nurse was in her 40s and looked about like most Redgunkers who'd had more than too many husbands. Damned good bowler, though.

"Coming on shift?" Mina asked and Pritchett flashed a big, crooked-toothed smile. "God, Pritchett, you look like you been drinking Jack on the job again."

"I—I'm getting married."

"What?"

"I met him just last week and my head's been in a whirl. You know me. Head as nails and won't put up with crap from anybody, doctor, patient, mayor, lawyer, governor, or husband. Don't have a soft spot on my whole alligator body—" She touched her bony, scaly chest through pink, worn, hospital scrubs. "Or maybe just one. For this one man. And, damn it, I don't believe in love-at-first-sight—not like Mabel Delashmit does, and she's been in love-at-first-sight more times than I can count on my fingers and toes, plus yours. But, God—" She went off like a firecracker, talking, talking. Then this tough alligator-skinned hard-as-nails nurse turned Polyanna-mush walked off, a little weepy, with her knees wobbling, crying and fudging like a school girl. Pritchett obviously did not know her fling came in a jar. Or two.

Mina took a deep breath.

People were sleeping around with aliens. And marrying them. She was in a blue funk at the thought. The funk was getting worse. She was exhausted. Maybe, utterly devastated.

3

SHE'D PUT SOME MONEY INTO A CABIN AND 40 ACRES OF WOODS. THE cabin nestled in the pines at the top of a hill. Behind it a fast stream ran clear and cool and fish-laden, unlike the muggy, muddy swamps of Redgunk, with their ugly Redgunk toads.

She opened the cabin and jugged her gear in, finally placing her two jars as Lucy had placed Werner, on the mantle above the fireplace. She sat on the moth-eaten couch to look at them and ponder and to let her skin crawl unabated. She'd met an old friend at Uncle Joe's Corner Liquor Store and Gas, while fueling up. Audrey Hamilton was married to that real estate fellow over in Nain, but, over the gurgling sounds of pumping gasoline, she confided that she'd taken a lover—the ideal lover—or, rather, he'd taken her, out behind the stones of the old cemetery. There were very few experiences like the one she'd just had, she said, except for maybe last year's July 4 fireworks display over on Jim Flatside's farm, south of town. Mina pictured, and knew

When she kissed him, it was as if she kissed a twin who'd been lost since birth; as if she kissed someone she knew better than herself.

it was the case, that this woman Audrey had had her first real experience in the realm of sustained passion and of the graceful, grace-giving erotic, which is severely lacking in the relationships of Redgunk and most places like it, though there has been talk of some of it up in Blue Falls, during the last century. Mina knew, somehow, even without Audrey Hamilton telling her, that Audrey's lover came out of some jar, now secreted away someplace, and that Audrey went sometimes in the middle of the night to where she kept him. To her true love. She went like a witch, when the moon was full and life was taking itself up to the brim and about ready to gush out over the tops of the proverbial cup; she went to those jars with a humming in her heart, and a wicked, wild, wonderful dancing in her soul, and an excited lucidity, to release the demon and to become, herself, like an angel, or really human. And Mina never knew Audrey Hamilton or any Redgunk to have real passion like that. Before this invasion.

S HE HAD THIS FELLOW IN A JAR. A BEAUTIFUL, BLOND-headed demon. And she felt the urge now to walk in the moonlight with him, to pull from her body and his the electricity of lovers, to open her whole being to the sensations of a *real* man. Over and over she struggled and argued with herself about re-inflating him; throughout the afternoon she was assaulted, first by doubts and then by hope. Finally the urges and curiosity got the better of her, and by nightfall she'd placed the plastic tubing on a coffee table to stare at it, then moved it to the hearth, and finally plunged both ends into either jar. The effect was immediate: a blast of fish smell; something living and writhing falling to the floor. Finally Anson appeared, full grown and awake and dressed now in a felt shirt, jeans, and hiking boots appropriate to the cabin.

"So—you took me up on my offer to go fishing for the weekend," he said, looking around at the meager furnishings and the sturdy split-log walls, with those incredible eyes that now met hers.

"God, you are beautiful—" she muttered at him.

"I am here to please you."

"What are you, really?"

"I told you. Imagine, Mina, a species, an entire species, whose sole end and sole desire and sole energy is the need to please. And I don't mean to please in a wag-the-tail, doggy way. Mina, I am of a species that meets its own complex desires and aspirations by responding to the complex desires and aspirations for excellence, the real needs of others."

"A whole species? No such species exists—just to please another, I mean."

"Imagine millions of us passing through space, looking only for the moment of fulfillment and, indeed, ecstasy, touching fellow beings in understanding and in—

"In love?"

She closed her eyes, trying not to hate that word. She had images of Mom, reaching around some fat grizzled man, Dad Baumer, to be specific, comparing tattoos with each other and sipping whiskey. Love? Like when that Dad bastard took Mom roaring up and down the road on his chopped Harley, only to stop at Burly Bob's for some illegal squeezings and snorting sessions involving several known and unknown illicit drugs, and then to come home to her own house, to Mina's room to try and touch her, and she just *let*? Like when his gang the Road Roaches breezed into town to put themselves up in her mother's house, and Mina had to lock her bedroom door and put her

head under the pillow to keep from hearing all their wild honkin' noises and to have some control? God, she had to have *some* control!

Love? Like what she had with Bobby Joe Raymond Thornton, not knowing she could do any better, keeping kitchen for his hulking roughness and inconsiderate, mostly unconsciously moving body, in that one-room apartment, even before she graduated, when she was just a school girl; even when he was out with other women—Bess Wewer, for example. Or mothering his drunkenness and even his cut lips from late night stay-outs with the boys and the whores down at Burly Bob's Bar and Grill, only to have him hit her? Hit her. Hit her, until she felt she must die, even if by her own hand or—find something else, like another Bobby Joe Raymond Thornton, find another and another like Pritchett had? Or—get some control!

No thank you to love.

But—sometimes, she allowed herself to look into her own eyes there in her own place, in the mirror. The dust-clouds of the motorcycle gangs disappeared, and Mom with her big, hairy tattooed arms gave way to Mom with, yeah, that sometimes single, tender look in even her old puckered, Jack Daniel's eyes, her eyes, human, too, looking through the haze and the crack. Remembrance of Bobby Joe Raymond Thornton's violence gave way to the moments with him of tenderness; of some real man and some real woman, who in very rare moments touched each other, even though the haze of indifference, hateful, harsh, waited for them on every side.

Now she thought of another real man. She could see him hiding in the thin veils of the mirror, in her own eyes. Not this time Bobby Joe, or anyone like him, neither him nor Dad Baumer, nor anything resembling things canine. She could see that damned archetype, is what she could see. And it didn't do her much good, to be quite honest. Because it was only then, only when the crap cleared and she saw what she really wanted, that she felt bone-deep lonely.

She really could never choose anything and anyone that would get her over it. Could she? Except maybe herself.

"I CAN IMAGINE THAT SPECIES—" SHE SAID THOUGHTFULLY, REALIZING this wasn't quite true but that it could be: "I imagine it is what humans are like. Wandering on the planet through space, looking for that one brilliant and everlasting moment of love." Why had she opened herself to this guy? She hardly knew him.

Anson shrugged at her. "That's all I am, Mina. Think about it. My life's sustenance, my life's purpose, has been quite simply to find you and to breathe the air with you."

She couldn't help it. Maybe she should have kicked herself or pinched her leg or something. But she reached out and stroked his face. Alone in a cabin in the middle of Mississippi, she was stroking an alien's face: the first real date in all of history.

Out in the world below the piney, breeze-blown hill, countless women—and apparently men—were meeting their innermost desires face-to-face, and fulfilling them, and becoming happy, and scorching up like wild new stars. At this very moment, people were being fulfilled, Lots of them. Could that be wrong? She ripped her hand away. "I don't buy it. Tell me everything."

He withdrew a bit, looked a little hurt. "We've been wandering for centuries, Mina. Only here, now, on Earth have we found creatures who need our transformational abilities, our abilities to please. It's almost as if there's a plan in it—. But enough about me. I'm glad we've come to the cabin; I was hoping we would. I'm a good cook—I love to experiment with spices and—"

She was stunned. Too damned perfect. Maybe there *was* some sort of an invasion plan.

SHE INSISTED ON COOKING THE MEAL HERSELF.

He did not disturb her as she cooked. He hummed to himself as he set the table, built and lit the fire, put a match to the candles, poured the wine. Candles and fireplace glittered in the wine glasses; outside, the woods were dark, the sun had set and the stars were beginning to shine out over the faint glow at the horizon and all across the state. Far in the distance, the frog-singers began to ring.

"Stars are out," he said, looking out the window, his face in profile. She set the shrimp and rice on the table. He raised his wine glass: "To what we can make out of you and me."

"To—" She started to hesitate and then found hesitation such a struggle that it didn't seem right. "Yes."

"Come look," he said in a voice that would melt cold butter, like the kind Opaline Redon's grandmother used to make. "Come see the stars." She did. He put his arm around her shoulder, as if she had willed it, and the frogs sang to high heavens.

Someplace on the other side of the bed covers, he whispered: "All we have done—from the first cosmic moment, all I have done is—look for you." For the completing other half.

When she kissed him, it was as if she kissed a twin who'd been lost since birth; as if she kissed someone she knew better than herself. The whole galadnemed world looked different; as if everyone and everything in Redgunk had been lost—Mom, Dad, Baumer, any Road Roaches—but was now electrified. As if from a single kiss, a whole wave of salvation could sweep across a county, over the hills and trees, to nuke all the vulgar, darkest, most pathetic parts of a most pathetic world into something sacred. And maybe that was the real reason why those Dog Men of Redgunk circumambulated the Redgunk women, because, even without awareness, they were lured by the sacred there, yearning for it in a deeper way than they could possibly comprehend, as a million white-gowned pilgrims circle some ancient stone temple of Truth, seven times circumambulating a Ka'aba of soul, like the seven planets riding round in their respective starry spheres, and the seven brilliant, musical Pythagorean notes of the crotchet Redgunk swamps.

Do you think, as in bowling, the gross anatomy and tissue of men and women can, with just a breath, just an exquisite touch of the lover, become something so subtle it is like gossamer wings, melting into nothing?

She thought that. She was like some *be*, some bird on those wings, circling higher and higher in the convection currents of an atmosphere far more clear and inspiring than the air of mere Earth.

And then—doubt. She found herself pulling away from him, moving, writhing, about to explode—but full of doubt. Stopping. Breaking. She pulled away.

"No," she said. *Suppose I got pregnant—with this monster's Rosemary's Baby. Would my child live in a jar, be a plant, have to play with Liatris Smith's immaculately conceived day care rat, have to live in a world where monsters from outside human experience are looked down upon with scorn, where Road Roaches are more acceptable than brilliant, young, sensitive vine plants with no circulatory system? Would—would my baby be the first mutated casualty in what is really some plot to overthrow the world?*

"Don't stop," he whispered at her, gently. "You're so close. You're almost there—"

"Almost where?" she snapped, then realized he meant that not just physical but all sorts of fulfillment lurked right there at the threshold. "This is an invasion, isn't it? No thank you, sir. Not with an alien."

"Oh, Mima, don't you see? I am the one, just for you. There's one of us for every human on Earth: the perfect completion, wholeness. This moment in history has been planned from the beginning of things. Some of us are stormy, some are tempestuous, some are seemingly wholly flawed; but we are designed to fit in our just-right places.

The universe grows exactly what it grows. For you—I am the one. The one and only. The true mate."

"True mate," she echoed.

"True Personal."

What if there really was something in the plant-heart of the universe that grew toward fulfillment, from which emerged two species a universe apart, but designed to complement and complete one another? What if the universe had a purpose: a wild turning of love and light and sheer joy?

She felt a sharp pang: guilt or fear, she wasn't sure which. She looked back over and saw his jaws, and the tubing. "Look, things are going a little fast for me. I need some time."

He looked toward her, and she refused to see the sparkling of his eyes. "But, Mima. It may be our first weekend, but we've been meant for it for all eternity—"

"I'm not sure about it yet. I need time to sit on it." Surely in the structure of things, no two such distant species could exist; beings were not meant for that kind of joy, that kind of wholeness. Were they? And even if they were—"Would you excuse me?"

She motioned to the jars and he said, "You want me to—"

"Yes, Anson. Please." His eyes were kind, even in this moment; eyes of the genuine. She almost stopped him, but then forced herself to look away. She smelled that poignant fishy transformation smell and, when she looked back, he was gone: only the green fluid in one jar and the tissue in the other remained of him. She took out the tubing.

"You're so close—" he had said. So close to what? The delusion of joy? Total planetary destruction? Sure: Fill us Redgunkers with a sense of absolute satisfaction and then eat us or drive us mad or destroy the whole species? Or make us—so joyful it hurts, knowing who and what we are? Redgunkers. Earthlings with winged hearts. Joy? To bell with that. She picked up the jar with green fluid and hurled it into the fire. It gurgled and gasped and bubbled and then was gone.

SHE SAT LOOKING AT THE FIRE LICKING AT BROKEN, BLACKENED strands of glass; she sat for a long time. And then she took the other jar outside and, under the wide expanse of stars, with a very controlled movement, slowly dumped it into the fast running brook. And he was gone.

She slept alone in the cabin that night; wandered the hillsides and along the brook the next day; slept alone again. Midweek she went back to civilization, and she went to the hospital first.

She was met with more little Redgunkish smiles than she could remember ever seeing. Not just patted-on or mindless smiles, but real ones. Lives went on as usual. But these people had—come home. They did what they did with amazing assurance, confidence, hope, contentment. At their homes, they all had their own Personals. Everyone of them. Unless there were others who'd done what she had?

She rounded on her patients, did a circumcison on the newborn, released someone here and there, changed a fitting, pronounced someone dead. Even the dead patient—they wheeled out with two jars. All across Redgunk and the whole galadnemed world, men and women met and loved their Personals. All seemed to have achieved something like excellence of being. You could tell some of them were hootin' and hollerin' and crowing like roosters down inside. Others had quiet smiles across their guts. But others—were not so easy to read.

She thought of Anson, someplace in the sweep of fire and water. When she went home; she thought of the universe and the many species in it, and what joy might have tasted like. The taste in her mouth, the mouth he'd kissed, was vaguely bitter. But, even so, when she went to listen to the frogs singing, and to search for the structure that connected and held notes together with stars, and stars with stars, she saw the sparkle of his eyes and something so sublime that it transcended gravity and melancholy and joy.

...And so all this to-do is a relic of that original state of ours, when we were whole, and now, when we are longing for and following after that primeval wholeness, we say we are in love.

—Aristophanes, in Plato's *Symposium* □

Giant robots conquer SF as two new Mecha games invade.



RIGHT: Sailor Moon is a rare sight in role-playing circles—a game targeted at young girls.

IT NEVER RAINS BUT IT POURS. YEARS CAN PASS without a single mecha game being released, and then, "Bang!" In the same month, two of them come out. This is one of those "bang" months and the two games are *Heavy Gear II* (from Activision, Inc., for PCs, \$48.95) and *Mech Warrior III* (from Microprose for PCs, \$44.95).

Mecha is a generic term for a particular flavor of the giant robots that are as much a staple of Japanese pop culture as the maverick cop is of American pop culture. Not an independent force like the 1960s *Giant Robo* or the 1970s *Johnny Soto* and his *Giant Robot*, mecha are usually vehicles for pilots. They are giant tanks that walk upright on two legs like their human creators. The Japanese fascination with mecha is similar to the fascination that Americans have with tanks: It is really

cool to be in a big, safe vehicle that can smash through things while blowing other things up. Both *HGII* and *MWIII* let you do plenty of smashing and blowing.

Of the two games, *Heavy Gear II* is harder. Based on the RPG/Wargame/Miniatures Rules franchise *Heavy Gear* from Dream Pod 9, *HGII* "gears" (as the mecha are called in the game) are more anthropomorphic, and the missions they undertake have a more infantry cast than the more support-weapon roles given to *MWIII*'s mecha. You can make the gears kneel and lie down, they have hands and arms that can actually interact with the game world, and they carry giant guns and swords that they can wield in addition to the weapons built into their bodies. This emphasis on playing a robot that mimics human actions got me killed more than once at the beginning of the game. I felt like I was directing a first-person shooter character and kept charging into the open to deal death. What I learned is that *HGII* does resemble a first-person shooter, but the one it harkens to is *Thief: The Dark Project*. Like *Thief*, *HGII* has a stealth meter; you are much better off sneaking up on and around your opponents than you are attacking them head on.

Mech Warrior III doesn't have a stealth meter, and most of its mechs (as the mecha are called in the game) don't have working hands. Based on the RPG/Wargame/Miniatures Rules franchise *BattleTech* from FASA, the emphasis in this game is building the right heavy-weapon platform for the battle at hand. There is less call in *MWIII* for stealth and avoiding combat. There is plenty of room for tactics and maneuver once the battle is joined, but you don't need the overwhelming positional advantage just to survive in *MWIII* as you do in *HGII*. There are two reasons for this. One is that enemy AI is better in *HGII* so you have to be smarter facing it. Two is that *MWIII* is a more detailed simulation. There are more weapons and systems for your mech; killing an opponent comes down as much to who has what armed and ready to fire as it does to who is in the better position.

RIGHT: While you wait for *George Lucas* to deliver the next *Star Wars* flick, you can keep busy with *The Endor Expansion*. **BELOW:** Unknown Armies: One Shots helps increase your enjoyment of what has turned out to be the game of the year.

The graphics in both games are great. Mechs and gears both leave tracks in soft ground. In the rain, drops land on the windshields of mechs (although not on gears). Guns and explosions shake the view with gratifying reality. The HUDs in both games keep all the information you need right in front of you. *MWIII* has more mechs, both to play and to fight against, while *HGII* has more missions to go on, including some set in space, which require 0-G maneuvering. *MWIII* has a much better manual; *HGII* gives you smarter squad mates and better control over them. Since my love is first-person shooters, I preferred *HGII*, but if you like to spend more time customizing your tank, then you will appreciate *MWIII*. Of course, if you find that you like mecha games, there is plenty of time to buy and play both. We probably have two years before the next mecha game is released.

Speaking of giant robot/tanks walking on two legs, the latest card set for the *Star Wars CCG* is *The Endor Expansion* (from Decipher Inc., \$2 a pack). You can mix these cards with earlier sets or construct Endor-only decks. The stand-alone sets' cards are designed for recreating the battle in and around the Imperial control bunker on the forest moon of Endor. Almost all Endor site cards are battle-grounds. There are cards for the mecha-like AT-STs and for speeder bikes. The game rules favor the low-ability unique Imperials and Rebels, scouts in particular. There are even Ewoks to do their part.

Meanwhile, in another galaxy entirely, the *Star Trek: The Next Generation* *Birth of the Federation* (from Microprose for PCs, \$39.99) lets you actually found the United Federation of Planets, or the Klingon Empire, or the Romulan Star Empire, or the Ferengi Alliance, or the Cardassian Union. *ST:NGBotF* is a turn-based strategy game that starts you in the home system of one of those five races, and from that humble beginning, sets you the task of conquering the galaxy.

Right off, it has to be said that *ST:NGBotF* is not *Sid Meier's Alpha Centauri*, the current leader of the turn-based strategy game



genre. *ST:NGBotF* lacks *AC*'s interface, AI, and automation. This is no particular shame; no other game currently on the market compares with *AC* in these categories either. Nor does *ST:NGBotF* have to compete with *AC* on all these levels. Like first-person shooters, the important thing in strategy games is often what you are trying to conquer rather than the game engine that governs that conquest. Thus, for immersiveness and background, *ST:NGBotF* has *AC* beat, interesting as *AC* is, it can't begin to compare to the 25 years of backstory that *ST:NGBotF* has to draw on.

Everything in *ST:NGBotF* is right there at the click of a mouse. Right click at anytime to change from strategic to diplomatic to tactical to production to intelligence views. In each system you control the economy and production, trying to get the most number of people creating the greatest number of goods at

the highest possible tech level so that you have the money and ships to explore and conquer. Diplomacy is used with the other major races as they are encountered, and intelligence is used to monitor the other empires, perform sabotage on them, and to guard the home front against their intelligence agents. Ships can be sent around the map, either creating trade routes or exploring, terraforming, and colonizing systems.

Ships can also fight. The tactical screen divides ships into task groups and lets you give each group different orders. You can



also give individual orders to single ships. The two fleets fight a round, and then you can change the orders (advised) or let your ships fight on. Active participation by the player can make a real difference. Well-ordered player forces can routinely defeat larger, better-armed computer forces if they are flown correctly.

It takes a long time to finish a game of *ST:NGBotF*. Things move fairly quickly in the beginning, but as you are more and more successful, it takes longer and longer to get through a turn. You can never really forget about a system and just leave it alone. Most need to be checked fairly often to be sure they are still building what is needed and that they are prepared to resist any invaders. Nor can the battles be automated; your ships can't be trusted to fight for themselves. Also, past a certain point, you will find you can produce more than you have money to use or maintain. This, fortunately, can be solved by letting your ships raid the remaining players.





superheroes. With their new powers they battle the magical menaces while falling in love, bickering, and reconciling with each other and their other friends, worrying about school, and putting up with their parents. Sort of like *Buffy the Vampire Slayer* with sailor suits. (Skirts and sailor shirts are the uniform for girls in almost every public school in Japan.)

As a game, *Sailor Moon* is a terrific starting place for the role-playing newcomer simply because its Tri-Stat game engine is simple. The rule book contains lots of hand-holding advice and plenty of examples. It is also set in a very loose universe. Nearly anything can and does happen in the *Sailor Moon* world and the rules reflect this. The GM has more leeway to let brand-new powers manifest, let reinforcements arrive at the best possible time, and have the wildest coincidence occur to save the day. It all fits the genre. And while a good speech is never out of place in any TV show (Where would *Babylon 5* have been without them?), the ability to defeat a villain by speaking passionately to it and awakening its inner, better nature is an actual power in *Sailor Moon*.

As a sourcebook, *Sailor Moon* is top notch. There are hundreds of licensed *Sailor Moon* products, but if there is a better sourcebook in English, it hasn't crossed my path. Even people who will never play the game will be happy with all the details about the series. The episode and character summaries alone would be worth the price of admission. Plus the art work. There are screen captures and line drawings on every page, plus 16 pages of full-color art. Some details of later seasons are brought up, but the focus is on the first two.

The *Sailor Moon Role Playing Game and Resource Book* would be a wonderful gift or purchase by anyone who knows and loves the series. Even if they are only fans of

anime, but haven't watched much *Sailor Moon*, all the information they need to play in the *Sailor Moon* world is contained in the book. I predict it will be easier for girls to actually play the game though, since there is very little background material that supports boy vs. boy conflict. In fact, one suggested campaign is to have the player make characters who are villains so they can fight and eventually be transformed by the Sailors. Still, even if you never pick up a pair of dice, there is plenty to enjoy in this game.

And speaking of enjoyment, *Unknown Armies: One Shots* (from Atlas Games, 80 pages, \$14.95), the first supplement for what is so far the game of the year, *Unknown Armies*, is out. It is a pack of five one-off scenarios for the UA rules. While a couple of them could be adapted to an ongoing campaign, they are mostly intended as stand-alone adventures. They come with pregenerated characters, don't

require any backstory setup, and none of the characters is particularly expected to survive the experience. (Hey, what do you want from a game of transcendental horror?) All the GM has to do is hand out the character sheets and everyone can get down to it.

Of the five, my favorite is "And I Feel Fine" by Geoffrey C. Grabowski, which reminds me pleasantly of the movie *Tremors*. Greg Stolze's "Jail Break" is also very good, but since it divides the players into two groups (the escaped prisoners and the hostages) it

is probably best run at a convention. In a regular group, mercy might crop up, but at a one-off at a con, everyone knows that death, even for the player characters, is only a trigger pull away. "Strange Days" by Tim Dedopulos, the tale of an Alex Able strike team that gets more than they bargained for, and "Fly to Heaven" also by Greg Stolze, an aircraft drama about a psychopath trying to become an archetype, are both fine, but didn't push as many of my buttons. "Joy and Sorrow" by Nicole Lindross and John Tynes is several interesting ideas that never seem to quite come together.

Any excuse to play *Unknown Armies* is a good one, and this pack is more than worth the money. The best thing about these scenarios is that there isn't a dungeon crawl among them. Like the game they were written for, each is more interested in stretching the minds and emotions of both the players and the characters than they are in giving excuses to hand out experience points. □

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PRIMORDIAL CHILI

It was the best pot of chili ever. Really. In the history of this or any other universe.

In the first place, there was magic garlic. Fadrinski didn't know the garlic was magic; he just picked it up one afternoon while snooping through the produce section of Butson's Family Market. But it was magic just the same—magic, self-peeling, all big-cloved garlic from the fields of the 14th Bard of Quangarla, a secret society in the midst of the streets of Yalta, so secret, in fact, that the other members didn't even know they were members. But the Bard, who traveled daily to his fields by cab, was well schooled in the ancient art of garlic growing. He was a genius, a master, and in possession of the hallowed Runes of Dunderhans which, when chanted over with the 13 sacred philosophies of Rudolf the Curious, imparted to the plants and their pungent roots a flavor so refined and elegant and perfect as to be the very essence of garlic. Anyone eating of this plant would not only experience the taste sensation of a lifetime, but would be (afterwards) unpopular in elevators for weeks.

BY TOM GERENCER ILLUSTRATION BY MOEBIUS



Then, too, there were the tomatoes. Fadriński got them in the same produce section as the garlic but, brought into the supermarket that morning on an 18 wheeler, they had not come from California, as the writing on their box proclaimed, but had fallen through a freak worm-hole in space from the dimension of Zang, where the tomato (or at least, a fruit that grows on many of the worlds there, and which looks, smells, tastes like, and therefore *is* a tomato) is revered among the 75 cultures of the Pakancy, is worshiped, is given lifetimes from the various races and species there, in the form of cultivation and works of art. (In Zang, for example, the most famous piece of sculpture is not a David or a Perseus on Horseback or an Atlas shouldering the world, but a great big, vine-ripened, plum tomato on a plate.)

U e could go on about the beans, hand picked, not by Juan Valdez, but a monk named Alarcon in a town some 60 miles south of Guadalajara, who had discovered, recently, the meaning of life but decided, somewhat mischievously, not to tell anyone; or the beef, cubed, not ground, the meat of philosopher cows that had realized, at the moment of slaughter, that all life, somehow, was this feeling they could not articulate as love, and so they gave freely and lovingly of themselves, releasing endorphins and antibodies and various subtle healing chemicals

He stood there for a time,
not thinking, while the chili
itself within him and entered
stream. It coursed through
dissolving arterial plaque,
immune system, curing his

into their bloodstreams and therefore into their muscles and meat at the last moment.

We could expatulate on the singular nature of the herbs, many of which had been raised by a man in Crete, wildly insane but possessed of the belief that he was here, solely, as a servant of cumin and oregano and basil and pepper, and who raised his plants as one would raise children, and sang to them, day and night, and played lyrical melodies for them on his balalaika until the local police obtained an injunction against him, but by that time the spices had already been harvested and sent on their way.

Or we could think more about the onions, the green peppers, the chives, all of which had come from similarly unprecedented places and pasts, all of which had shown up, at one time or another, in a sauce here, a dish of Chicken Olympia there, making that sauce—that dish—taste exceptionally good, but never, in the history of history itself, had such a panoply—a pantheon—of ingredients come together in one pot.

Was it God who guided his hand, or the fates, when he diced these ingredients, not knowing, not trying, into the perfect geometrical shapes and sizes that would release their flavors at the most opportune possible microseconds into the mix? Was it magic or luck that caused him, languid and in touch with the inner field of unknowable chaos, to add these ingredients at just the right times (one nanosecond either way and it would have gone wrong) and in just the right proportions? The world may never know. It's like trying to find out how many licks it takes to get to the Tootsie Roll center of a Toot-

sie Pop, or why public servants are always so condescending. But for some reason all these things came to pass, and connected, and it was chili, and it was good.

Of course, these weren't the only factors. The knife he had used had not been the perfect knife, from a certain standpoint. Simple stainless steel, it was an 87¢ supermarket cheapie that any chef worth his toque would have laughed at and maybe tossed into the trash among the compost. But from another angle, it was the perfect knife, because a true, tempered, folded-steel, sharpened Samura sword, for one thing, would not have fit in the drawer, and for another, the effect of Mars being in Capricorn and the other planets being similarly arranged in a certain form and pattern proscribed by the Druids of old (and in fact this was the very planetary arrangement that had been pointed to by Stonehenge and missed by all the theorists and archeologists and demented, lovestruck historian architects ever since) would not have acted on a Samurai sword as they acted on this knife, which had lain, overnight, in the one perfect spot on all the Earth where the myriad clockwork gravities could tug gently here, push softly there, and rearrange the otherwise inferiorly interlocked molecules along the edge of the blade.

The cutting board had a similar history. A cheap and mediocre-looking thing, it had been spotted, by Fadriński, in a garage sale three years ago, labeled with a haggard strip of masking tape, marked with the number 1.00. But it was made of the wood of the one true

cross, preserved in the purest mineral oil all these years by an ancient order of nuns and then removed one day, by accident, by another, far less famous carpenter, who had come to do some work on the lavatory. The nuns had been mortified, but the series of coincidences that had led the wood to Fadriński's kitchen, to be used on this one perfect night, would have met with approval beneath their numerous habits. The Lord, after all, works in mysterious ways.

So Fadriński diced and chopped and browned and spiced, pouring olive oil from olives pressed by a bored bodhisattva in between visitations, into an old, chintzy-looking, teflon-kote pot that had actually been formed from some metal stolen from Roswell Air Force Base by a journalist in the 1960s, and then hidden and lost and since, now, resurfaced. The metal had been from a sentient spacecraft, and it possessed powers of understanding, which the right conditions would (and did) cause to leach forth into whatever was located near it.

He drained beans and added tomatoes and he simmered and stirred with a spoon made of wood from a forest blessed by Mohammed. He put in all the ingredients, one by one, at times which, interrelated, formed an algebraic translation of the meaning of life, and then he went to his couch and read a book by the 14th Dalai Lama on the nature of compassion, and was so engrossed by this book that he let the chili simmer for four solid hours, giving the flavors a chance not only to marry, but to settle down and raise little, gorgeous flavor children, which intermingled and danced. During this time, the pot, releasing its wisdom, also acted as a par-

abolic mirror, catching radio and light waves from this and other worlds, within which were encoded coincidentally co-arriving broadcasts of philosophy and science and religion and love, and the pot transduced and transferred these signals from space into feelings and flavors, spread deep within the sauce.

■■■■■ his was, at the last, chili that transcended chili, penetrating to the very core of chili-ness and beyond, into the realm of art. This was art in the truest interpretation—not the product of an ego, but the product of God in a nonsecular sense; the bringing together of truth and beauty on such a level that, were taste not a medium so fleeting, and were this chili of a volume and amount such that it could be sampled by all the teeming, lucky peoples of the Earth throughout time, it would be deemed, far and away, the most beautiful piece of work ever produced by mankind, outstripping Bach and Picasso, da Vinci and Eliot.

Just the aroma that steamed from the surface of this chili was enough to send Fadrinski, reading his book, into a state of satiety and absolute love, which could be felt, telepathically, by people for miles around. Young men, forgetting the constraints of political correctness and the imagined jeers of their friends, were holding doors open for old ladies. Spouses were making up after fights somehow

just feeling;
digested
his blood-
his veins,
boosting his
acne.

silly now. People were helping each other. Pitching in. Caring.

And not only the planets but the Universe aligned, once in its own long life, and for those hours Copernicus was wrong, and the Earth was the center, and more specifically, the very crux of the hub was this one glowing stewpot, and the chili within.

And then it was finished. It was done.

Fadrinski arose, setting aside his reading with a gentleness and love that had not been experienced by a book since the beginning of time. And he got to his feet, and he went to the stove.

He could understand, now. He could understand everything. All people, all things. He saw them not as separate from himself, but as parts of a larger whole, and he saw all the times he had been angered by the actions of another, and was able to penetrate to the source of this anger, to the hardships experienced by others just as he himself experienced hardships, until the whole world was one big, hardwired circuit of pain, passed from person to person to person, and Fadrinski became a pressure relief valve. His circuit had closed, and he blew this pain off into the stratosphere in the form of complete and total, all-encompassing love.

And he got a spoon out of the drawer beneath the microwave, and slowly, carefully, he let its scoop slide down beneath the surface of the rich, red sauce.

This was a red, too, the likes of which had never been witnessed before. It came from a frequency largely unused, missed, most of the time, to one side or the other, or phased out by the collisions of nearby peaks and troughs of the waves of light.

But here it was pure; even augmented by other frequencies from the spectrum of all possible wavelengths, until this, like and in conjunction with the smell, was a symphony of sense. It washed and played over Fadrinski's features, and it stripped away all heartache, all sorrow, and although he had never been a Mel Gibson, a Kirk Douglas, a Tom Cruise, no woman on the planet, seeing him with that light on his face, would have been able to remember the names of any of these men.

He inhaled the steam, and the chili, its molecules parting to accept the presence of the spoon, lovingly produced more.

And he tasted it.

There are not words to describe such a taste. Delicious? A thrift-shop word, plastic and pale next to the reality of what was happening in the nerves of Fadrinski's tongue. Sumptuous? Mouth-watering? Great? Dry husks of words that could never approach the experience. To say that fireworks were going off in his mouth, and that orchestras of flavor and sense and soul and imagination were playing down his spine, to the tips of his fingers and toes, would be a crude, vaudeville parody of the situation.

This was a religious experience, pure and simple. With that one tiny sip, Fadrinski achieved sainthood.

He stood there for a time, just feeling, not thinking, while the chili digested itself within him and entered his bloodstream. It coursed through his veins, dissolving arterial plaque, boosting his immune system, curing his acne. A slight irregularity in his heartbeat smoothed out, and outgrowths of benign but nonetheless worrisome basal cells (tiny ticking time bombs of a biological nature) acquiesced and let go, giving their energy and substance selflessly back to the good and the preservation of the larger whole.

One sip, and Fadrinski was filled. Was complete. Would not have to eat for weeks. And the thought manifested itself, of its own volition, in his head, of the need to get this chili, in portions however small, to each and every person on Earth.

And that, of course, was the instant when the knock came at the door.

Fadrinski's head turned slowly, in an effortless ballet of biomechanical motion. He did not walk but glide—actually levitated—to the door. He reached out and opened it, and it were as though he was simply opening another part of himself, to see a part of himself standing there on his doorstep.

Words were hardly needed, but they were used anyway, and Fadrinski's were, "So. You have come for the chili."

"I have," said the woman on the other side, and Fadrinski, in his all-knowing, all-loving state, knew that he must give it to her; that it was not his chili but belonged to all life everywhere, and that no one in its proximity could steal it or put it to misuse, because such petty, selfish thoughts would be overridden in the presence of the immutable foodstuff, by their own better nature.

So he went to the stove and lifted the pot, bringing it to her, knowing, somehow, that beautiful as she was, she was not a woman at all, but a member of a far older, far wiser race than mankind, which had known all along that this would all happen, and that, if you want to put a fine, exclusory point on things, this one pot of chili had been, since the time the world had congealed out of stardust, Earth's sole (and not unworthy) function.

She took the pot from him as any mother takes her child, and for a time they looked into one another's eyes.

He knew, while he looked, that she was taking this chili, not to be eaten, per se, but both back and forward in time, to be spread to every planet where life would eventually evolve (as the source thereof) and finally, to the singularity, back before time began, where this chili would act as a catalyst for the explosion that started it all—an outpouring, in the purest sense, of energy held back from motion, from action, from life.

"You are," she told him before she left, "one hell of a cook."

Fadrinski nodded, and shut the door.

He wondered if sometime he ought to make Ratatouille. □

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INTERNET

By Cory Doctorow

HALLOWE'EN—IS THERE A FINER HOL-
iday? Belly-basting guffaws of
candy, artfully draped toilet paper
in the trees, and monsters stalking
the night.

This month, I look at the frightful world of
Horror on the Web, with special emphasis on
Hallowe'en fun.



Start with a soundtrack: Rob Zombie (front-
man for White Zombie) launched Zombie-A-
Go-Go records last year, with a Web presence at
<http://www.zombie-a-go-go.com/>. Z-A-G-
G's talent, two bands called The Ghastly Ones
and The Bomboras, are a wonderful cross
between The Ramones and the incidental
music from a Scooby Doo episode. Especially
not to be missed is the anthology disk, *Hai-*

of prefabricated mobile haunted houses. For
more tens of thousands of dollars, you can
own your very own Swamp, Temple of Ter-
ror, or Dr. Frightner's Horror Theatre:
<http://hallowe'enproductions.com/>.

If you already own a haunted house and
merely want to dress it up a little, have a look
at Abracadaver, at <http://www.abracadaver.com>. Abracadaver delivers film-grade
cadavers and tombstones that any ghoul
would be proud to put on the mantle.

For the cost-conscious creep, have a peek
at Bob's Hallowe'en Page, at <http://www.anaserve.com/~BoBandrews/>. Bob
Andrews is a hobby-haunter par excellence,
and his recipes for low-cost props are indis-
pensable.

Now that you've dressed your home, cover



your corpse. Mom always told you to keep
your head warm, and what better covering
than a latex mask from Death Studios,
<http://www.deathstudios.com/>? These lov-
ingly crafted heads, torsos, and hands are
truly the stuff of nightmares, and Death Stu-
dios is the muckmaker of choice for king
spook Forrest Ackerman.

Chef Mayhem—a k a Jeff Baham—is the
greatest fan that the Magic Kingdom's
Haunted Mansion ever had. His site, at
<http://www.doombuggies.com>, is a magni-
ficent, unofficial tribute to the finest ride that
Disney's Imagineers ever built. Don't miss the
downloadable record albums, annotated his-
tory, and super-rare detail on Phantom Manor,
direct from Disneyland-Paris.

As you pursue your haunted research fur-
ther you'll want to visit the Horror Web Ring,
an ambitious collection of over a hundred hor-
ror-related Web sites: <http://www.geocities.com/SunsetStrip/Palladium/580/4/horror-ring.html>.

Finally, what Hallowe'en would be com-
plete without a mention of Edgar Allan Poe,
the king of horror? Start at the Dauphin
County Library System's reference page on
Poe, at <http://dcls.org/reference/poe.html>,
then tie thee to Polygram's site for *Closed On
Account of Robies*, a brilliant CD filled with
the likes of Iggy Pop, Christopher Walken, and
Marianne Faithfull reading the works of the
great man: <http://www.polygram-us.com/mondopoe/>.

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